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JAPANESE WEAPONS ILLUSTRATED

1944

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*Prepared under the direction of
The Chief of the Imperial General Staff*

THE WAR OFFICE,
September, 1944

JAPANESE WEAPONS ILLUSTRATED

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INTRODUCTION

This book is not intended to be a technical handbook, but an aid to the identification of Japanese Army equipment.

Sections 3, Self-propelled guns, and 9, Military bridges, represent classes of equipment which the Japanese Army must be expected to develop, and for which illustrations will be provided as and when they become available.

Early examination by experts of equipment of new or modified designs is of the utmost importance, and anything found but not shown in this book should be reported without delay.

JAPANESE WEAPONS ILLUSTRATED

YEAR DATES OF JAPANESE WEAPONS

1. The Japanese use two systems to denote the year or "model" number of their weapons and equipment.

(a) *System based on year of reigning Emperor*

Under this system the year numbers correspond with the years of reign of the last three Emperors, namely :—

- (i) Emperor MEIJI, whose reign began in 1868;
- (ii) Emperor TAISHO, whose reign began in 1912;
- (iii) Emperor SHOWA, who has reigned since 1926.

To determine the corresponding European date :—

In the MEIJI period, add the Japanese year date to 1867, thus "Model 38" rifle is that adopted in the 38th year of MEIJI (A.D. 1905).

In the TAISHO period, add the Japanese year date to 1911, thus "Model 11" LMG is that adopted in the 11th year of TAISHO (A.D. 1922).

In the SHOWA period the second system, as shown in paragraph (b) below, is usually adopted for *model* of weapons. However, the *date* of manufacture of weapons and equipment is frequently given under the SHOWA system. The corresponding European date is found by adding 1925, thus a weapon *dated* "SHOWA 16" was manufactured in 1941.

(b) *JIMMU system, based on year of founding of Japanese Empire*

Under this system year numbers run consecutively from the legendary founding of Japan under JIMMU, its first Emperor, in 660 B.C. Weapons designed in the SHOWA period (since 1926) are usually numbered on this system.

To determine the corresponding European date, subtract 660 from the Japanese date. Thus the Japanese year 2600 is A.D. 1940, the year 2595 is A.D. 1935, and so on. In practice the number is commonly abbreviated to the last two figures, so that the MMG "Model 92" is that adopted in 1932, and the medium tank "Model 97" that adopted in 1937.

The Model 0 aircraft (the Zero) was introduced in 2600 (A.D. 1940), and the 47-mm A tk gun Model 1 was introduced in 1941.

SECTION 1

TANKS

Japanese tank development began with the purchase of tanks from European armament manufacturers, and for some years the Japanese did little more than copy these tanks, introducing modifications from time to time. During the middle 1930's, however, they started designing their own tanks, which show very few signs of outside influence.

The latest tanks in service are a tankette M 2597, a light tank M 2595, a medium tank M 2597, and an amphibious tank. After these, the next in importance is probably an early design of tankette of which there are two models M 2592 and M 2594.

A few heavy tanks have been reported in the past, but the majority of these seem to have been copies of old Vickers designs of the pre-1930 period. Details of a somewhat later 27-ton tank, M 2595, have also been received, but this tank also is believed to be completely obsolete.

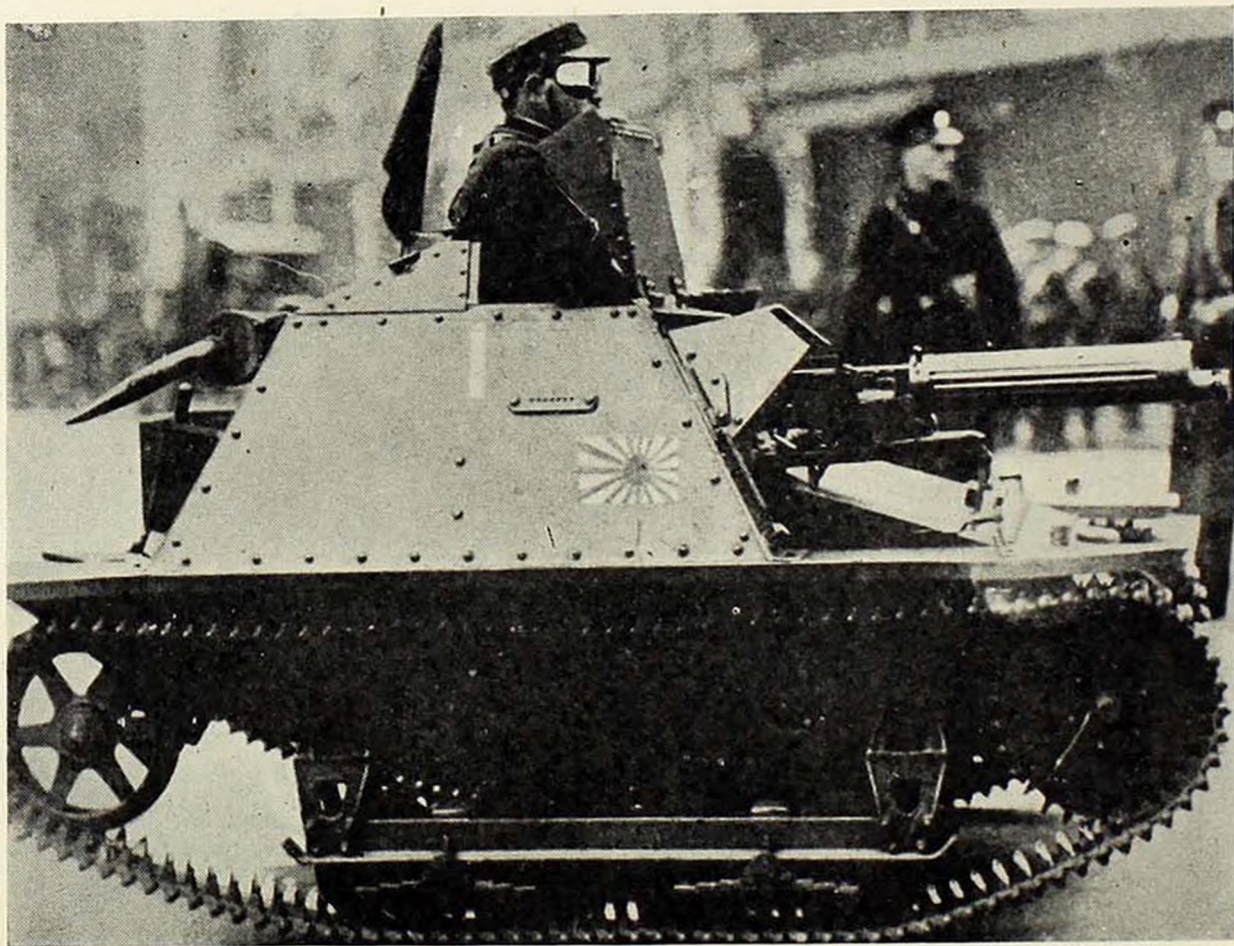


PLATE 1.—Carden-Loyd Two-man Tank

An old equipment, dating from about 1928 and believed to have been used by Japanese naval troops in Shanghai. Approximate details: weight: 2 tons. Length: 8 ft 0 in. Width: 5 ft 6 in. Height: 4 ft 6 in. Armament: Vickers type water-cooled MG in fixed superstructure. Crew: 2.



PLATE 2.—Tankette M 2592 (1932)

Weight : 3 tons. Length : 11 ft. Width : 5 ft 3 in. Height : 5 ft 4 in.
Armament : one MG in turret. Crew : 2.

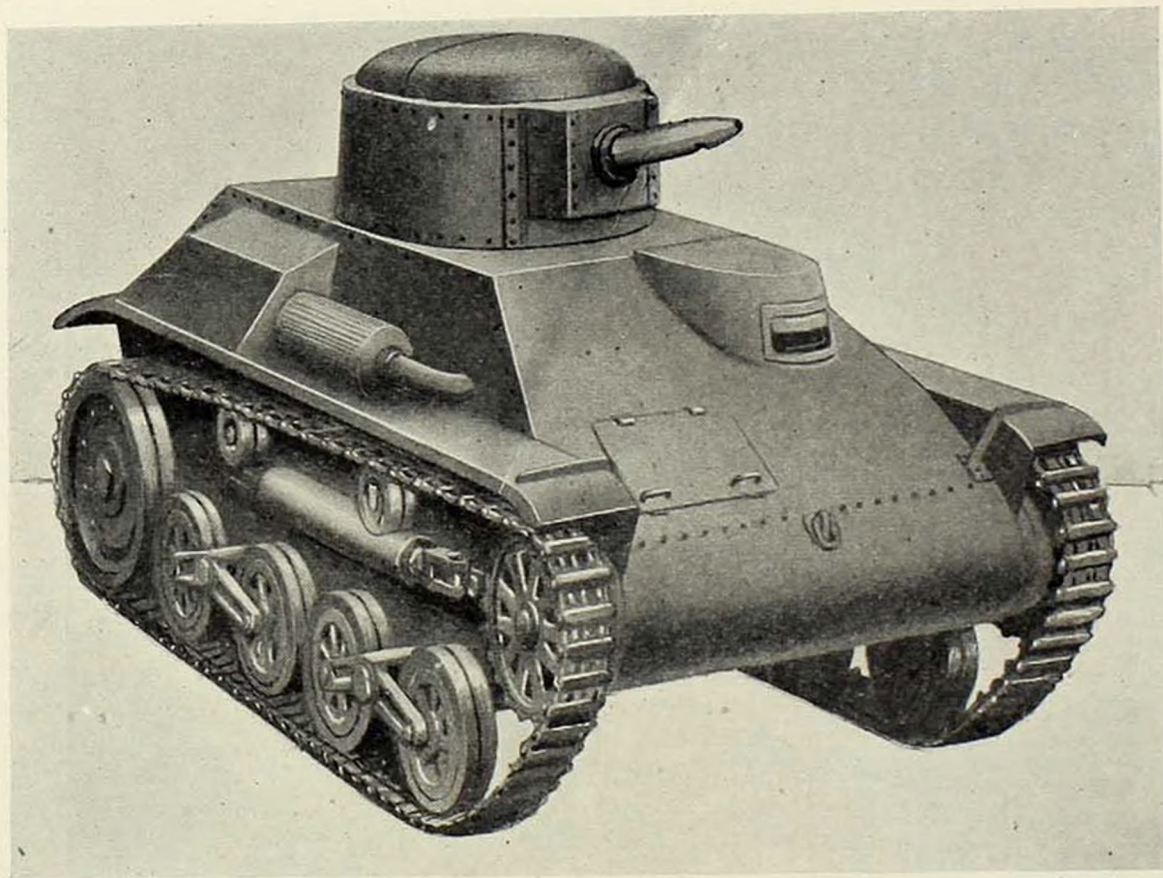


PLATE 3.—Tankette M 2597 (1937)

Weight: 4 tons 3 cwt. Length: 12 ft. Width: 6 ft. Height: 6 ft.
Armament: either one 37 mm (1.45 in) gun or one MG. Crew: 2.
Illustration shows turret MG in protecting sheath. For appearance of
37 mm (1.45 in) gun, see light tank M 2595 (Plates 5 and 6).

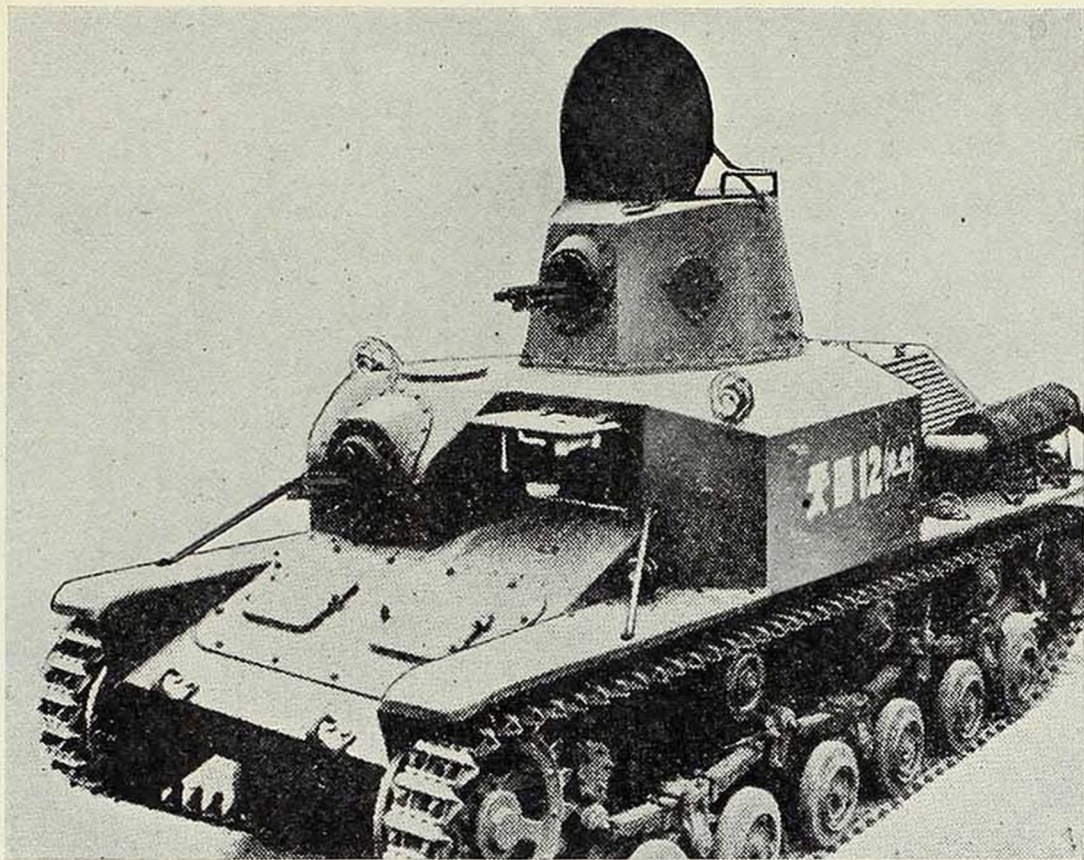


PLATE 4.—Light Tank M 2593 (1933)

An early light tank, now obsolescent. Approximate details: Weight: 7 tons. Length: 14 ft 8 in. Width: 5 ft 11 in. Height: 6 ft 0 in. Armament: two MGs Crew: three.

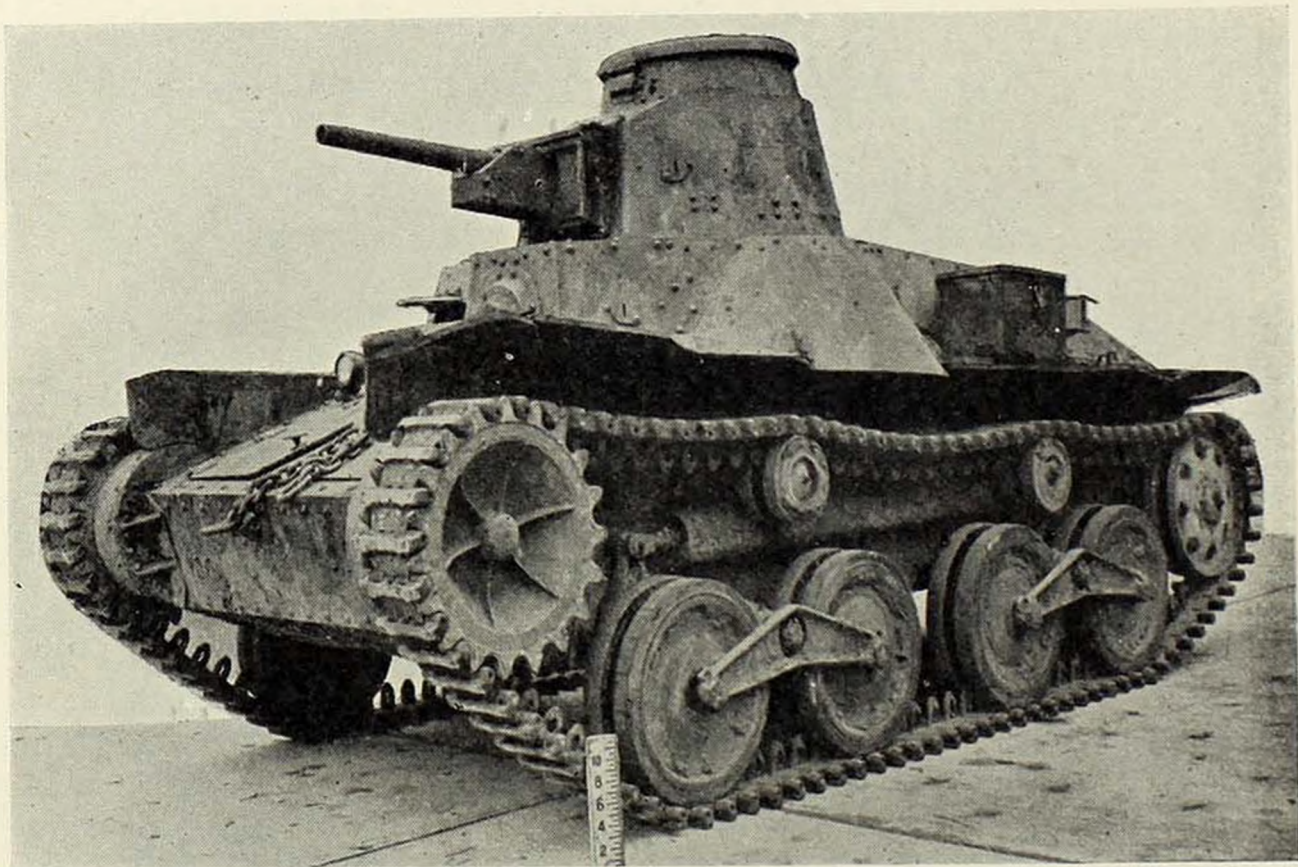


PLATE 5.—Light Tank M 2595 (1935)—nearside view

Weight: 7-9 tons. Length: 14 ft 4 in. Width: 6 ft 9 in. Height:
7 ft 0 in. Armament: one 37 mm (1.45 in) gun and two 7.7 mm (.303 in)
MGs. Crew: 3.

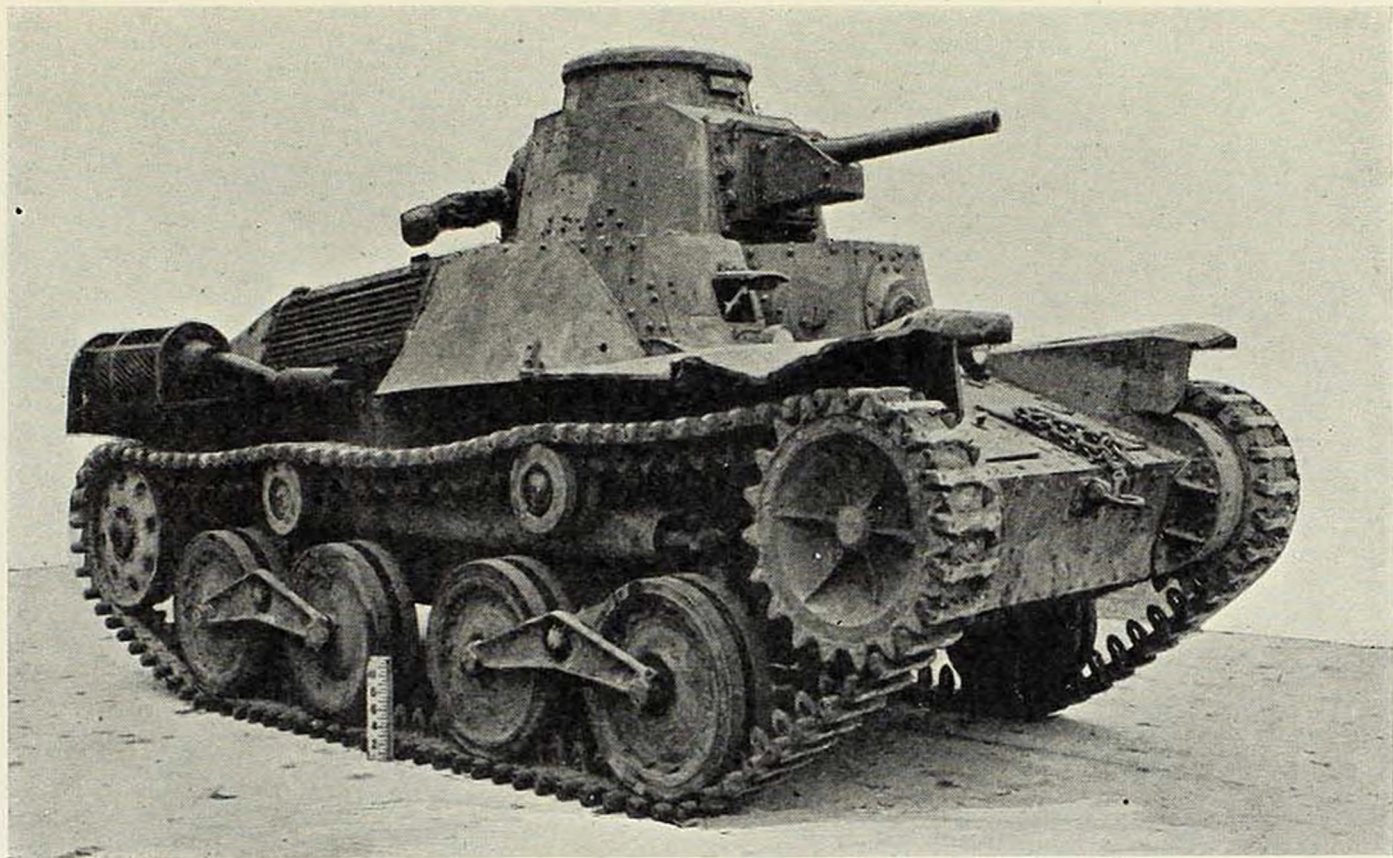


PLATE 6.—Light Tank M 2595 (1935)—offside view
One MG is mounted in the offside rear of the turret and the other in the
nearside front of the superstructure.

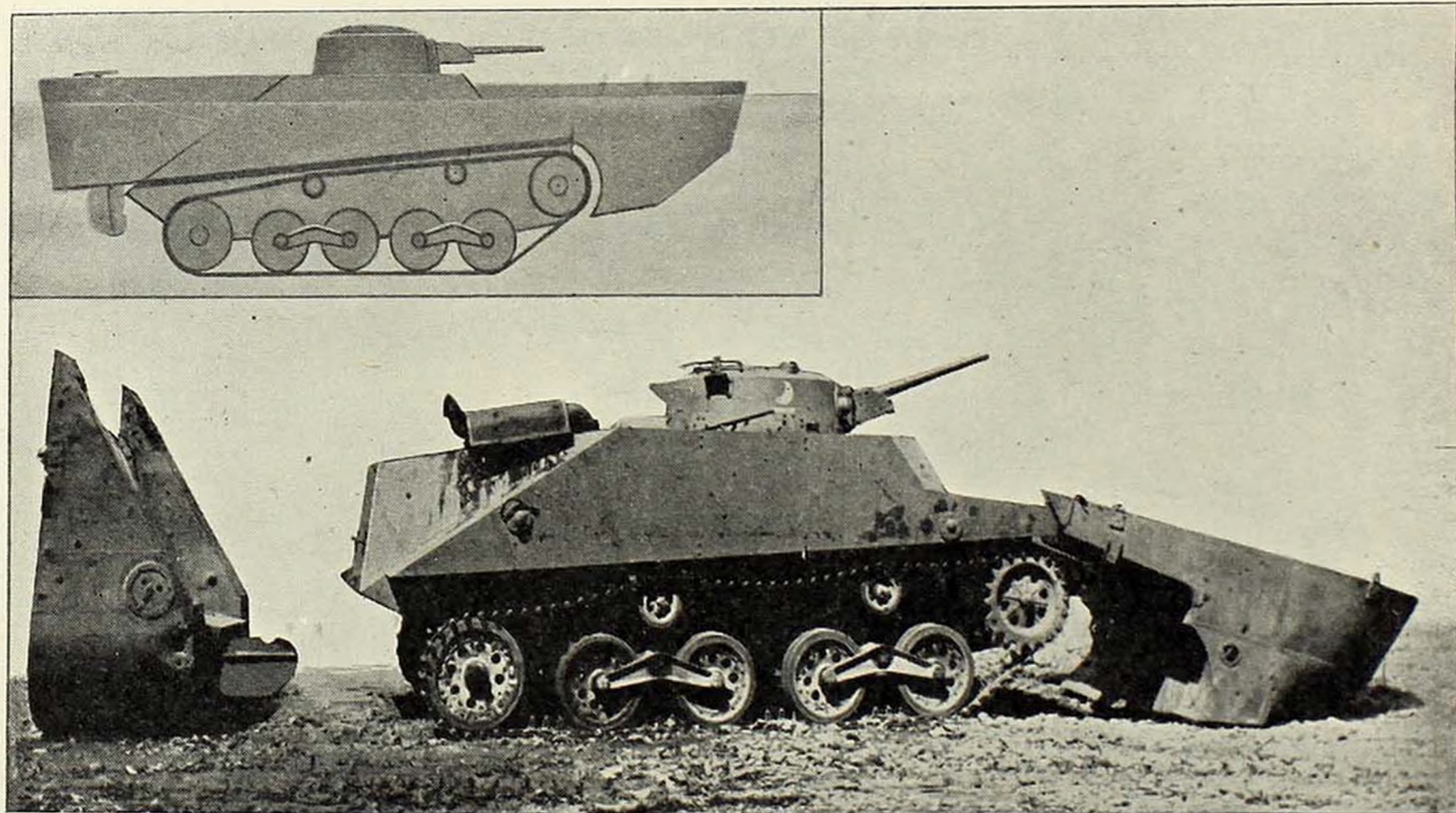


PLATE 7.—Amphibious Tank

Weight: 9 tons 8 cwt. Length: 15 ft 10 in. Width: 9 ft 2 in.
Height: 7 ft 8 in. Armament: 37 mm (1.45 in) gun and two MGs.
Crew: 5. The detachable pontoons are not included in the above particulars.

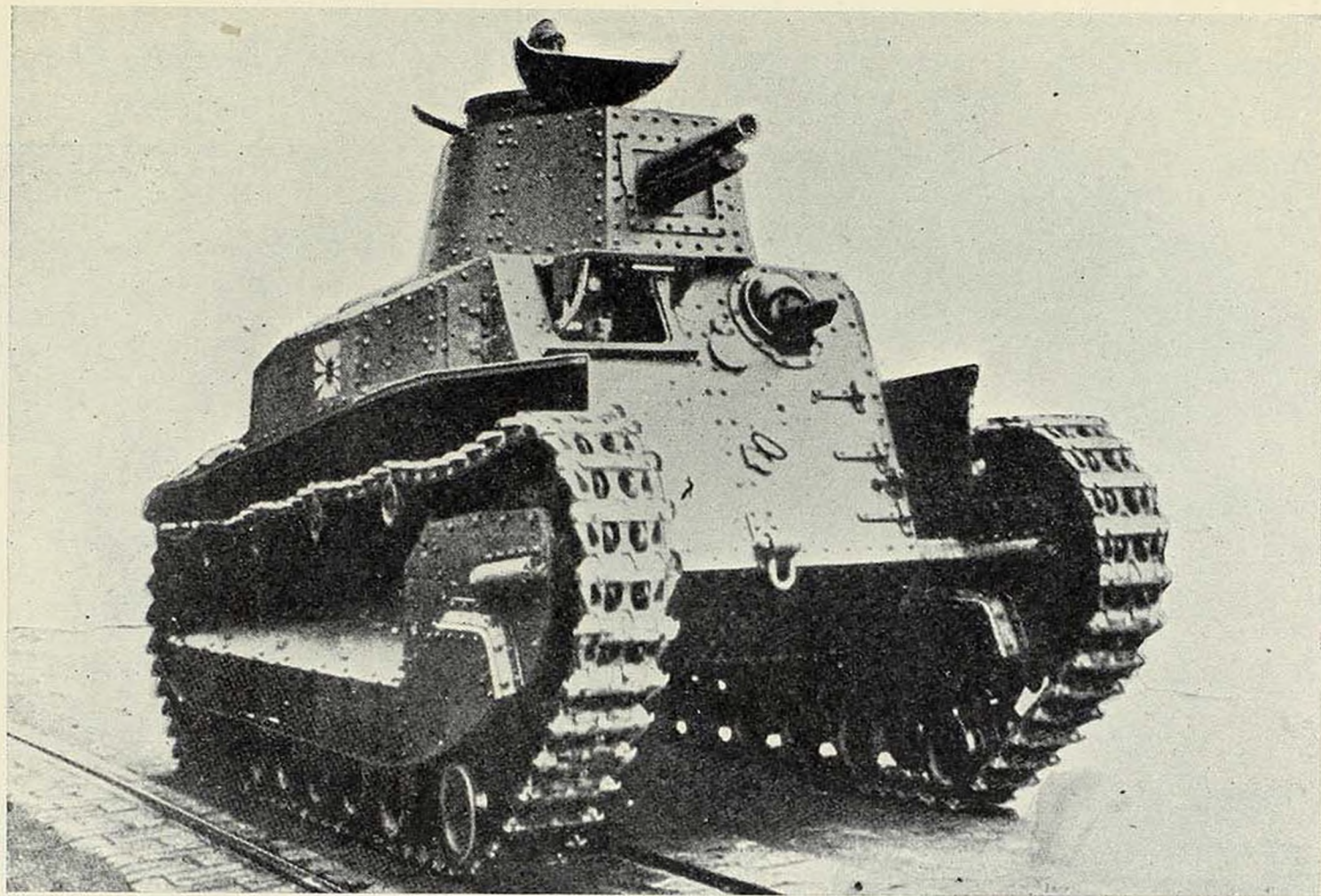


PLATE 8.—Medium Tank M 2594 (1934)—offside front view

The latest of three models developed from the Vickers Mark C, but now being superseded by the M 2597 medium tank. Weight: 14 tons. Armament: 57 mm (2.24 in) gun and two MGs. Crew: 5

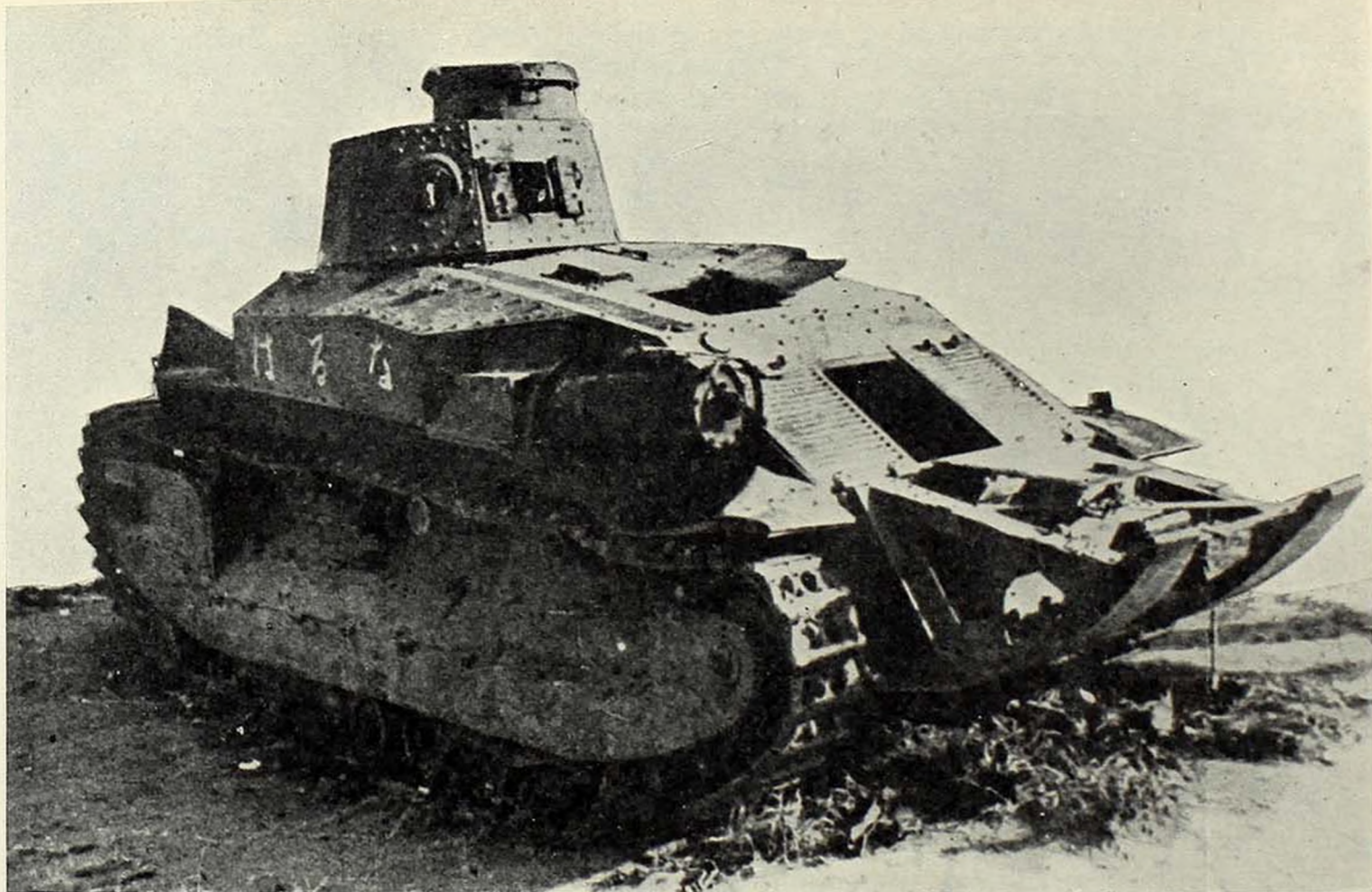


PLATE 9.—Medium Tank M 2594 (1934)—nearside rear view

Note ditch-crossing tail, and mounting for MG in rear of turret. Approximate dimensions are : Length : 20 ft 9 in (including tail). Width : 8 ft 4 in. Height : 8 ft 6 in.



PLATE 10.—Medium Tank M 2597 (1937)

Weight in action : 15 tons (approx). Length : 18 ft. Width : 7 ft 8 in.
Height : 7 ft 8 in. Armament : one 57 mm (2·24 in) gun and two MGs.
Crew : 4. Note railing type aerial on turret.

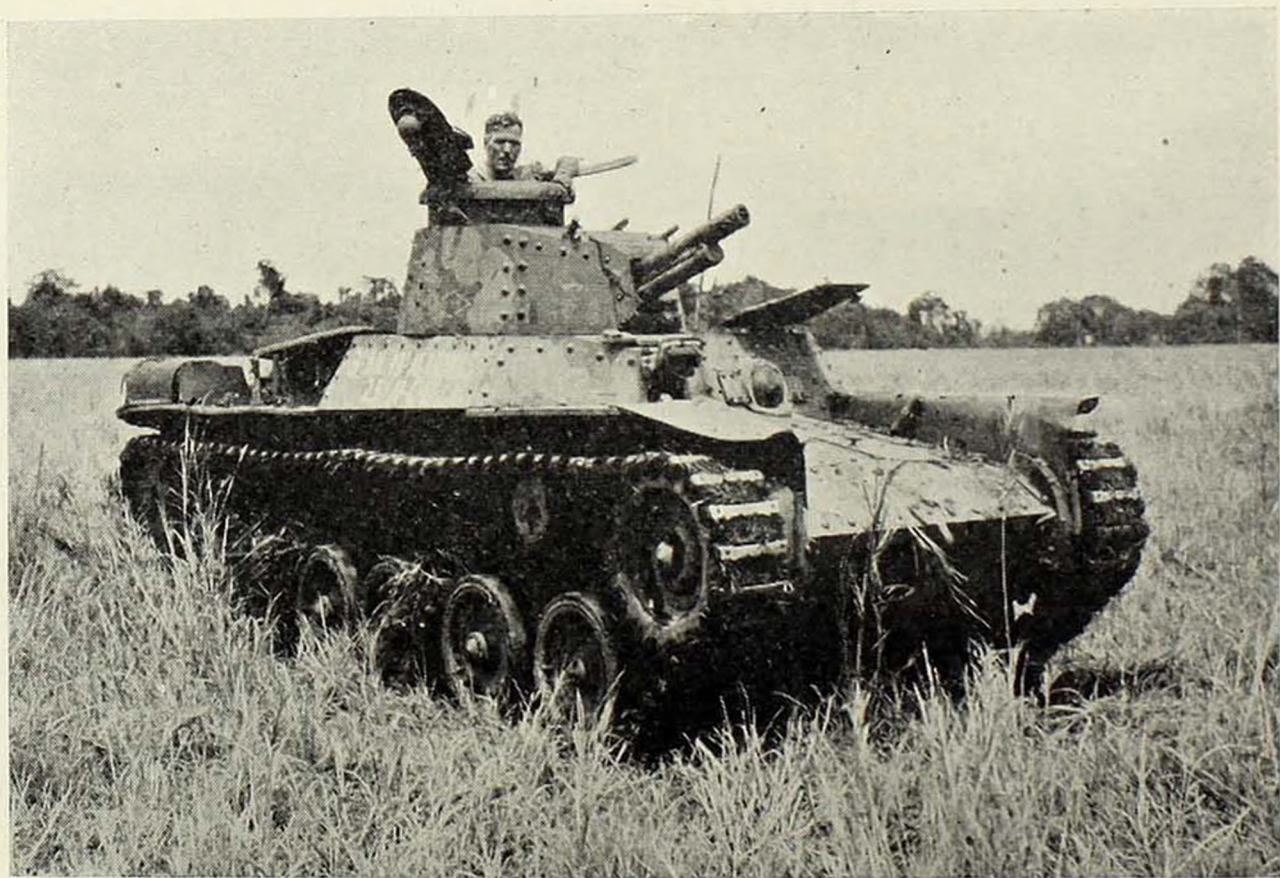


PLATE 11.—Medium Tank M 2597 (1937)

Same tank as in Plate 10, but with railing type aerial removed. This had been removed before capture.

SECTION 2

ARMOURED CARS

No Japanese armoured car of a type developed since 1933 has yet been identified.



PLATE 1.—4-wheeled armoured car—Vickers-Crossley type

Weight : $4\frac{3}{4}$ tons. Length : 16 ft $5\frac{1}{2}$ in. Width : 6 ft $1\frac{1}{2}$ in. Height : 8 ft $5\frac{1}{2}$ in. Armament : two MGs which can be used in any two of four mountings in turret. Crew : 4.

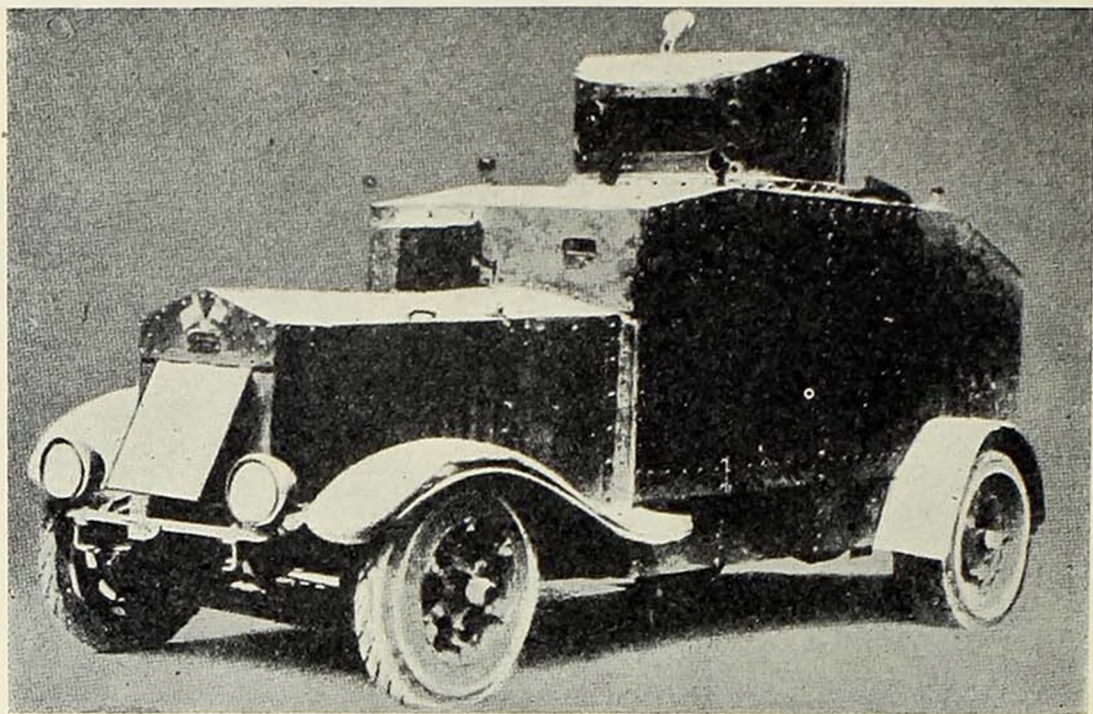


PLATE 2.—4-wheeled armoured car—Osaka M2592 (1932)

Weight: $5\frac{3}{4}$ tons. Length: 16 ft 5 in. Width: 6 ft 0 in. Height: 8 ft 8 in. Armament: two MGs (one in turret). Crew: 4.

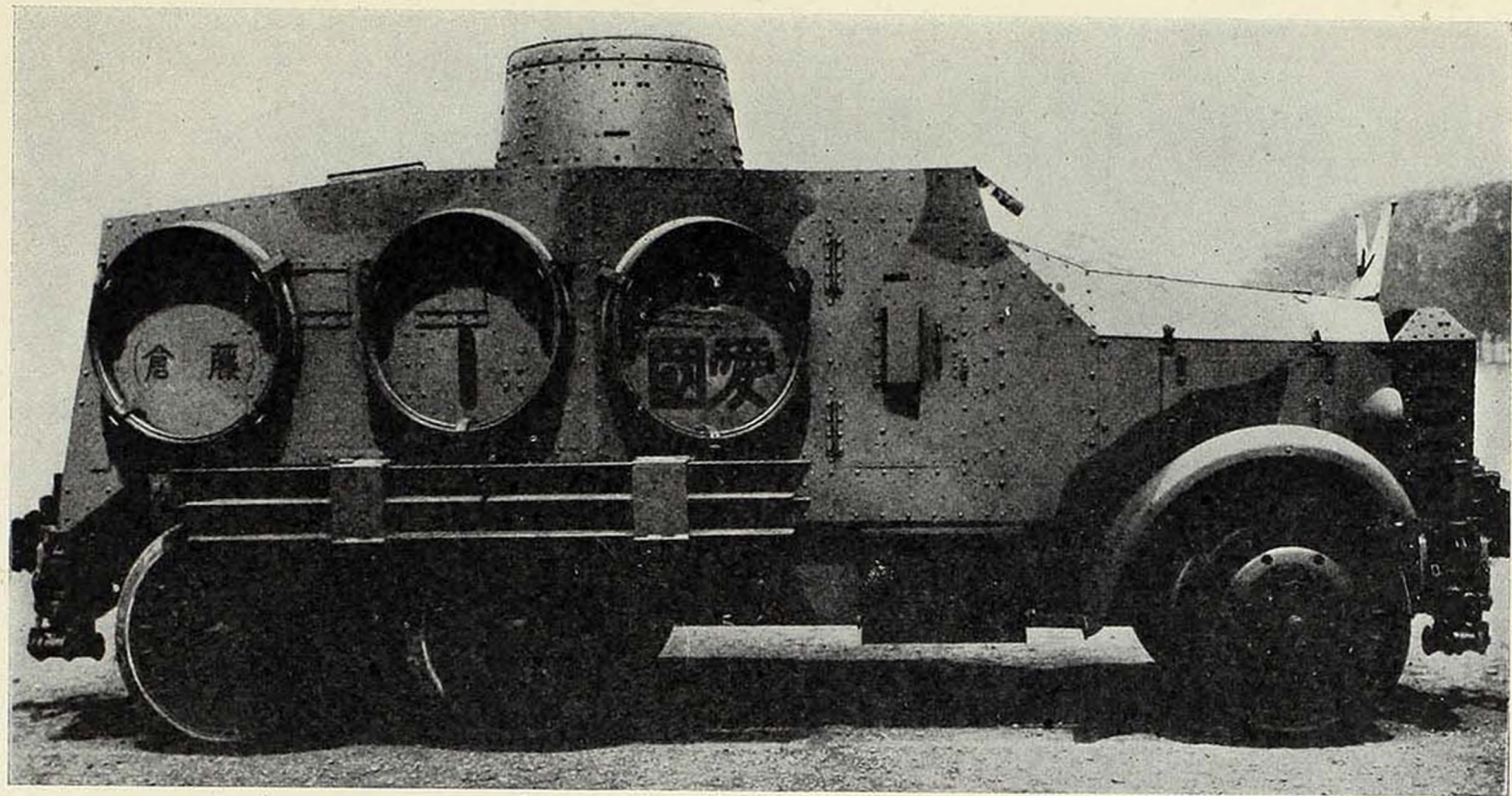


PLATE 3.—6-wheeled road-rail armoured car—Sumida M2593 (1933)
Weight : 7 tons. Length : 21 ft 6 in. Width : 6 ft 3 in. Height :
9 ft 8 in. Armament : one MG in turret, also seven pistol or machine
carbine ports in hull. Crew : 6.

SECTION 3

SELF-PROPELLED GUNS

SECTION 4

ANTI-TANK GUNS

The development of Japanese anti-tank guns has, by European standards, been slow. It is possible, however, that heavier equipments exist, and German influence on new design may become apparent.

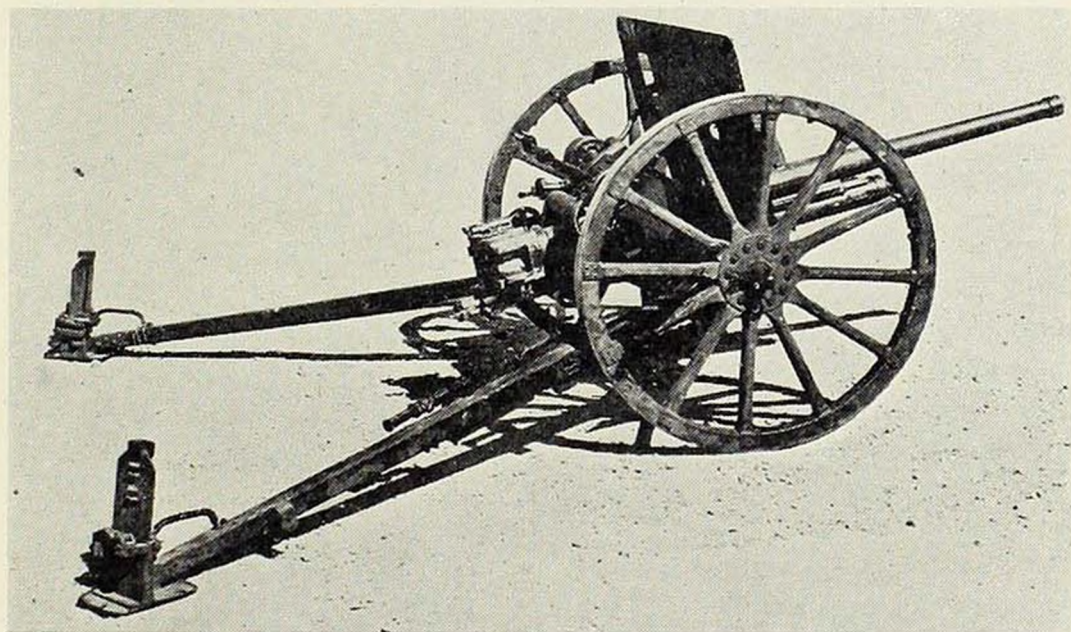


PLATE 1.—37-mm (1.45-in) A tk gun. Model 94 (1934)

Muzzle velocity : 2,300 fs. Weight of AP shell : 1 lb 8½ oz. Estimated perforation : 36-mm (1.4-in) at 250 yds, 32-mm (1.26-in) at 500 yds at 30 degrees impact.

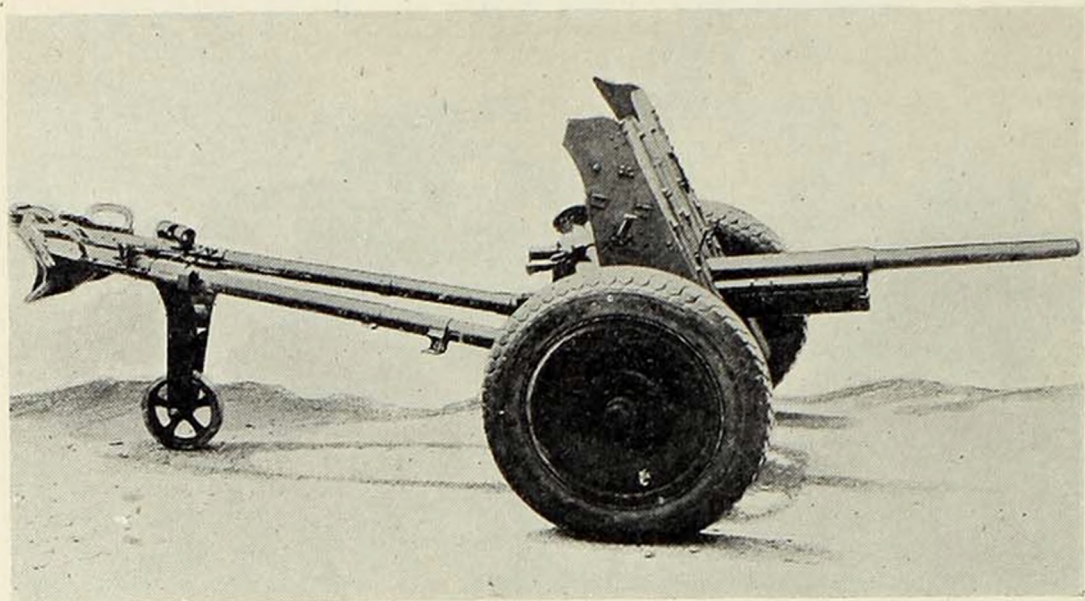


PLATE 2.—37-mm (1.45-in) A tk gun. Model 97 (Rheinmetall)
Muzzle velocity : 2,625 fs. Weight of AP shell : 11 lb 10 $\frac{3}{4}$ oz. Estimated
perforation : 41-mm (1.6-in) at 250 yds, 36-mm (1.4-in) at 500 yds
at 30 degrees impact.

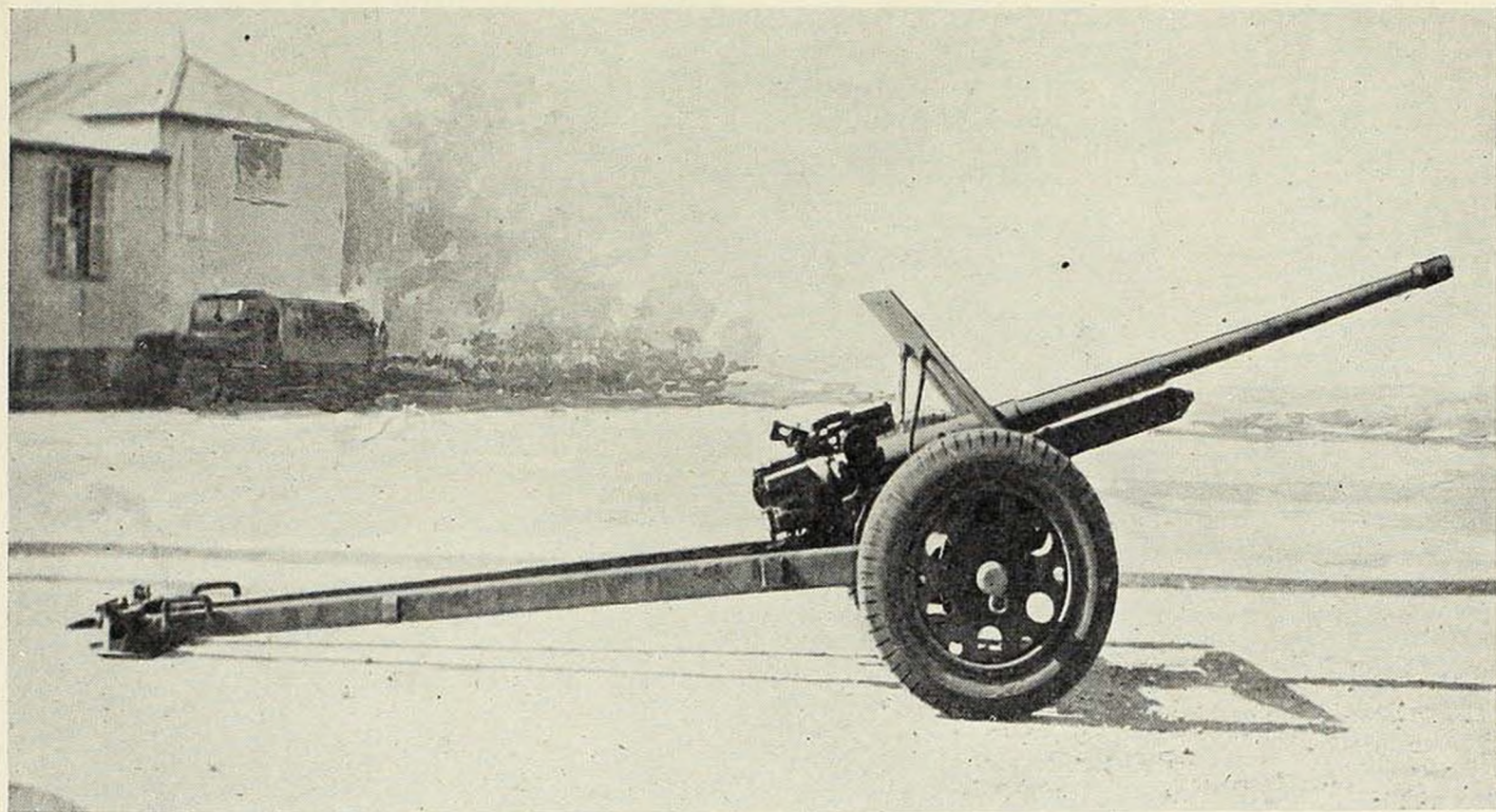


PLATE 3.—47-mm (1.85-in) A tk gun. Model 1 (1941)
Muzzle velocity : 2,701 fs. Weight of AP shell : 3 lb 6 oz. Estimated
perforation : 59-mm (2.4-in) at 500 yds, 45-mm (1.8-in) at 1,000 yds
at 30 degrees impact.

SECTION 5
ARTILLERY

The Japanese field artillery presents a somewhat mixed picture since a great variety of models is in use, considering the small number of different calibres involved. The most modern types in use are the 75 mm mountain gun Model 94 (1934), the 105 mm howitzer Model 91 (1931), the 105 mm gun Model 92 (1932), and the 150 mm howitzer Model 96 (1936), but all those illustrated are liable to be met, owing to the apparently slow rate of replacement.

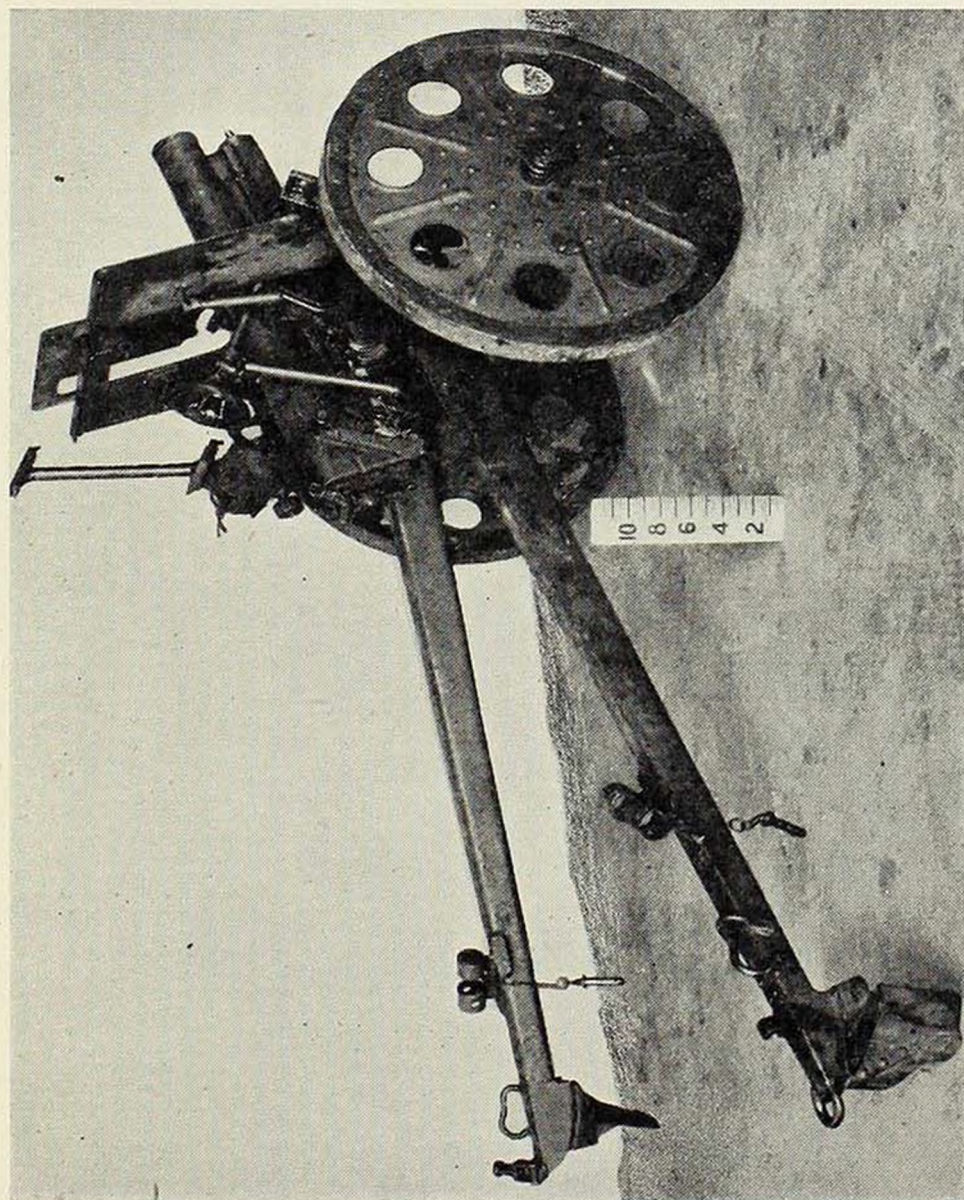


PLATE 1.—70-mm (2.76-in) battalion gun. Model 92 (1932)
MV : 650 fs. Max range : 3,000 yds. Weight of shell : 8.4 lb.

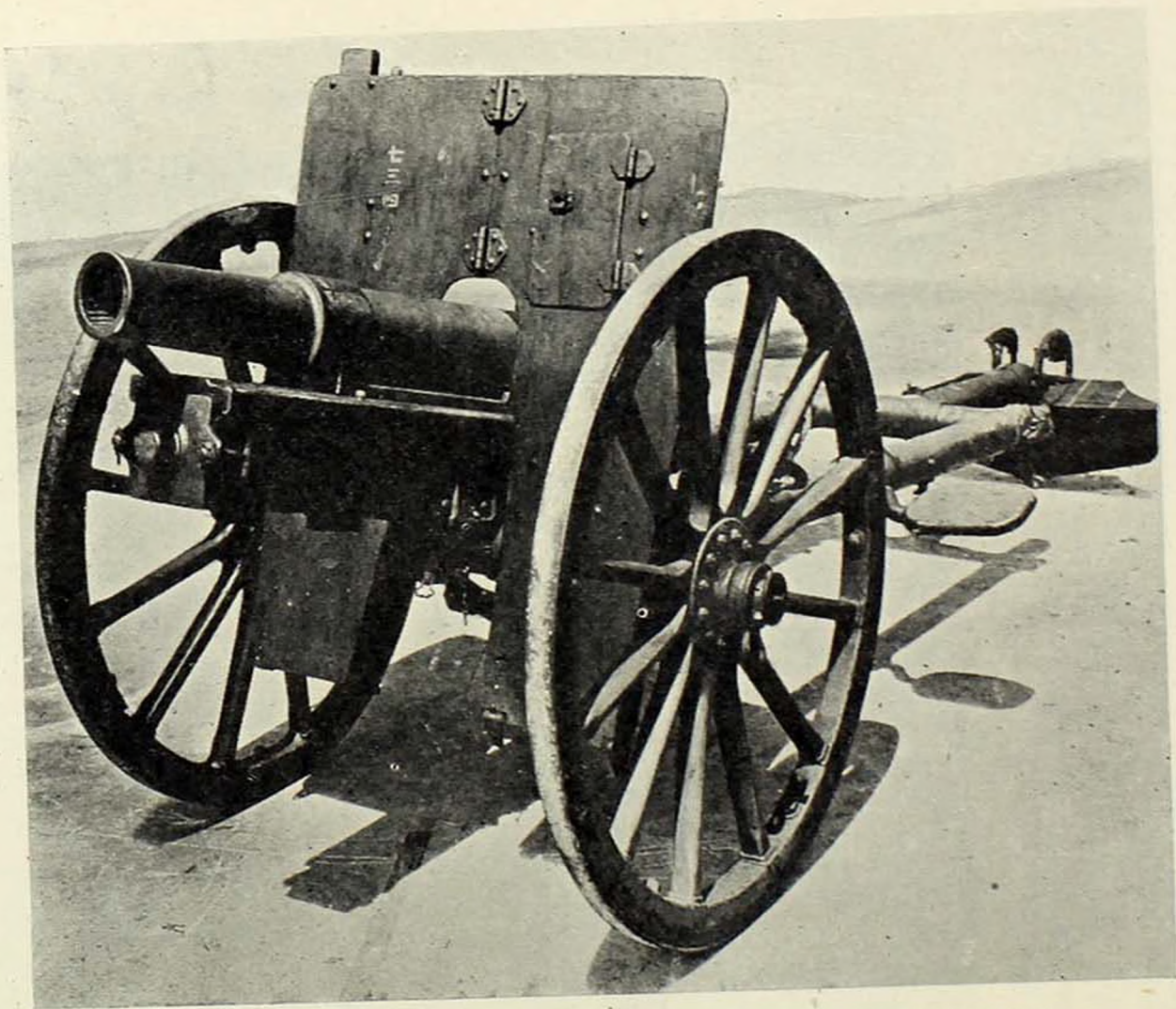


PLATE 2.—75-mm (2.95-in) infantry regimental gun. Meiji 41 (1908)
MV : 1,250 fs. Max range : 7,700 yds. Weight of shell : 14 lb.

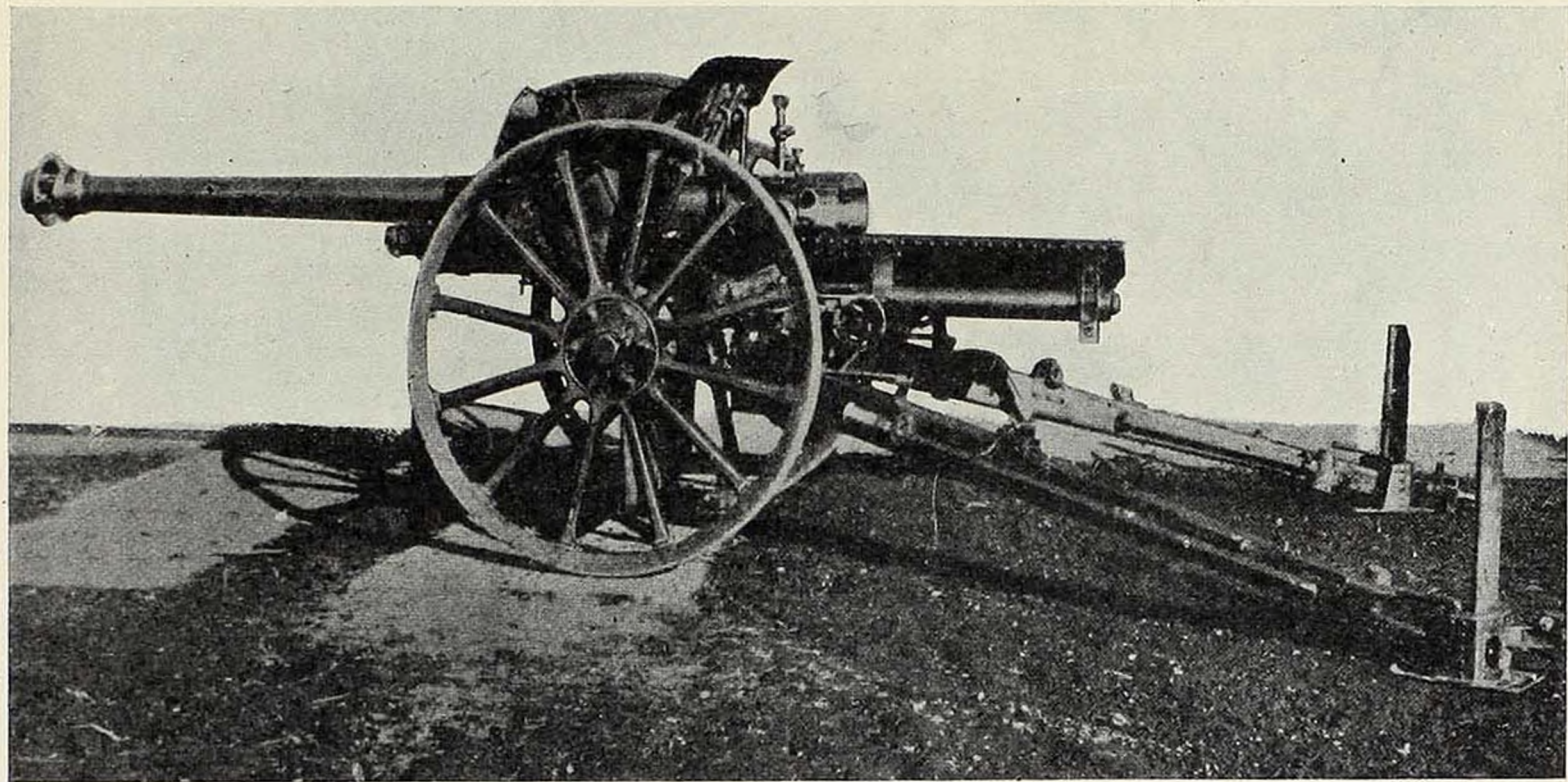


PLATE 3.—75-mm (2.95-in) field gun. Model 90 (1930)
MV : 2,230 fs. Max range : 13,300 yds. Weight of shell : 14.3 lb.

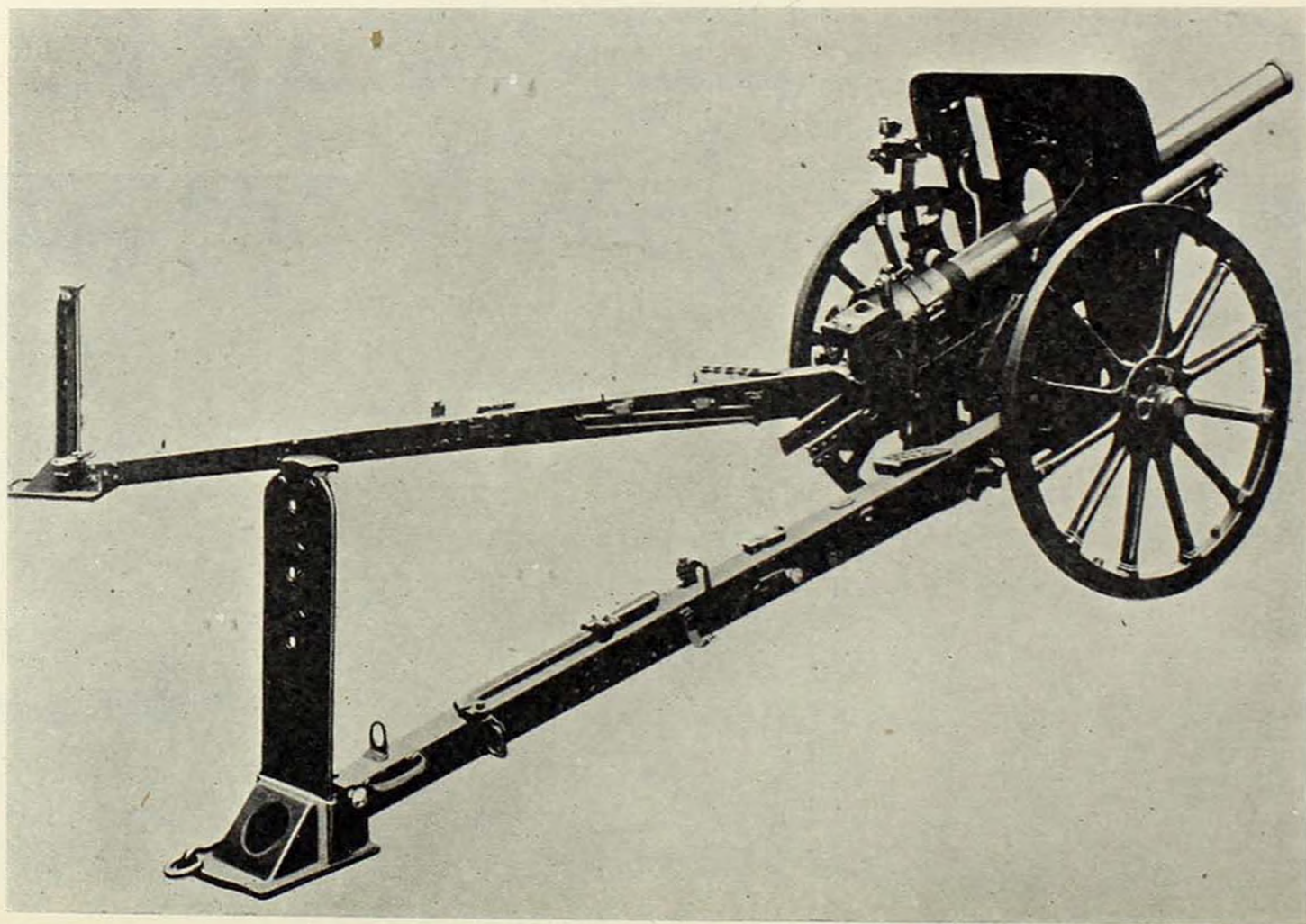


PLATE 4.—75-mm (2.95-in) mountain gun. Model 94 (1934)
MV : 1,300 fs. Max range : 8,750 yds. Weight of shell : 13.4 lb.

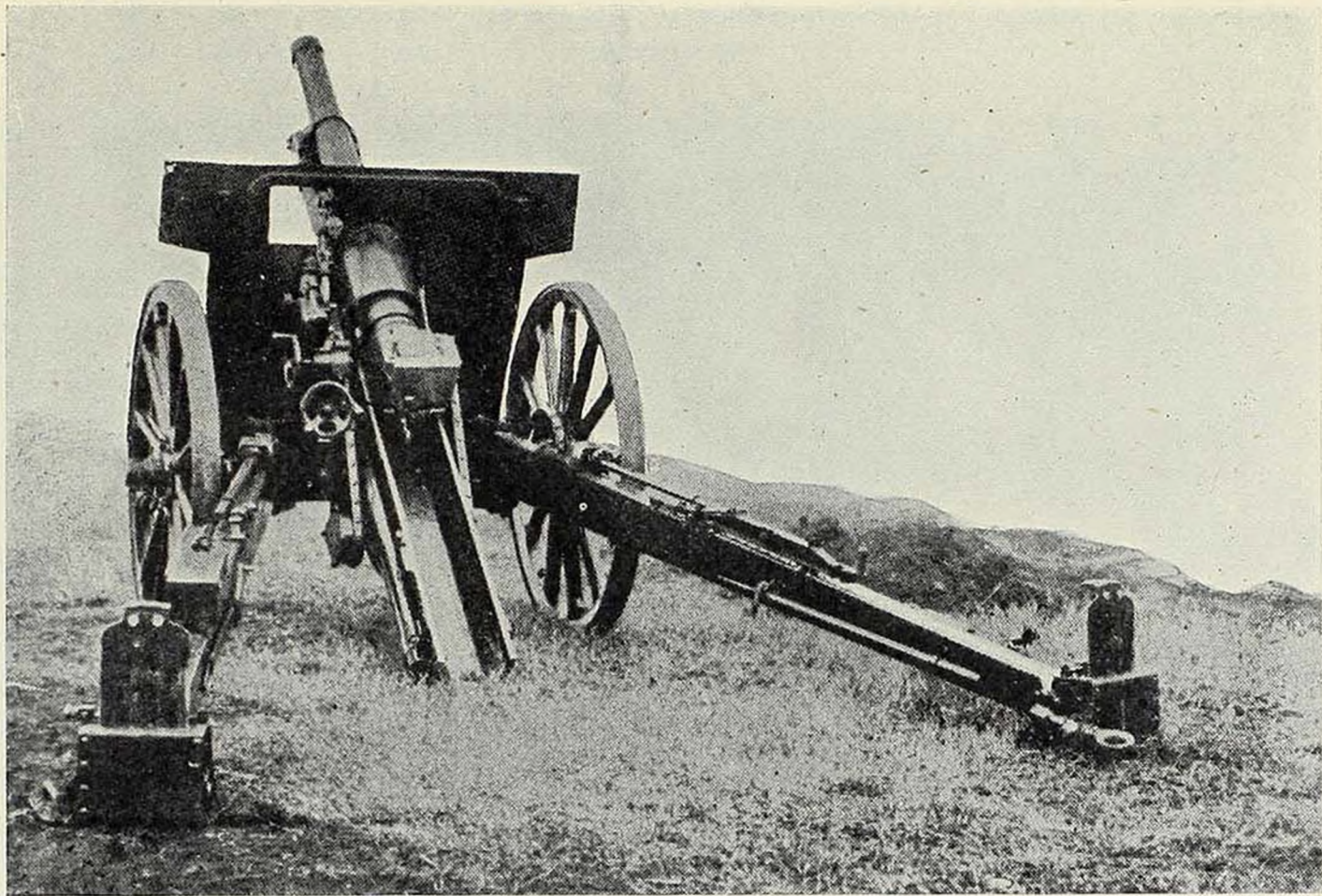


PLATE 5.—105-mm (4.14-in) howitzer. Model 91 (1931)
MV : 1,790 fs. Max range : 11,811 yds. Weight of shell : 33 lb.

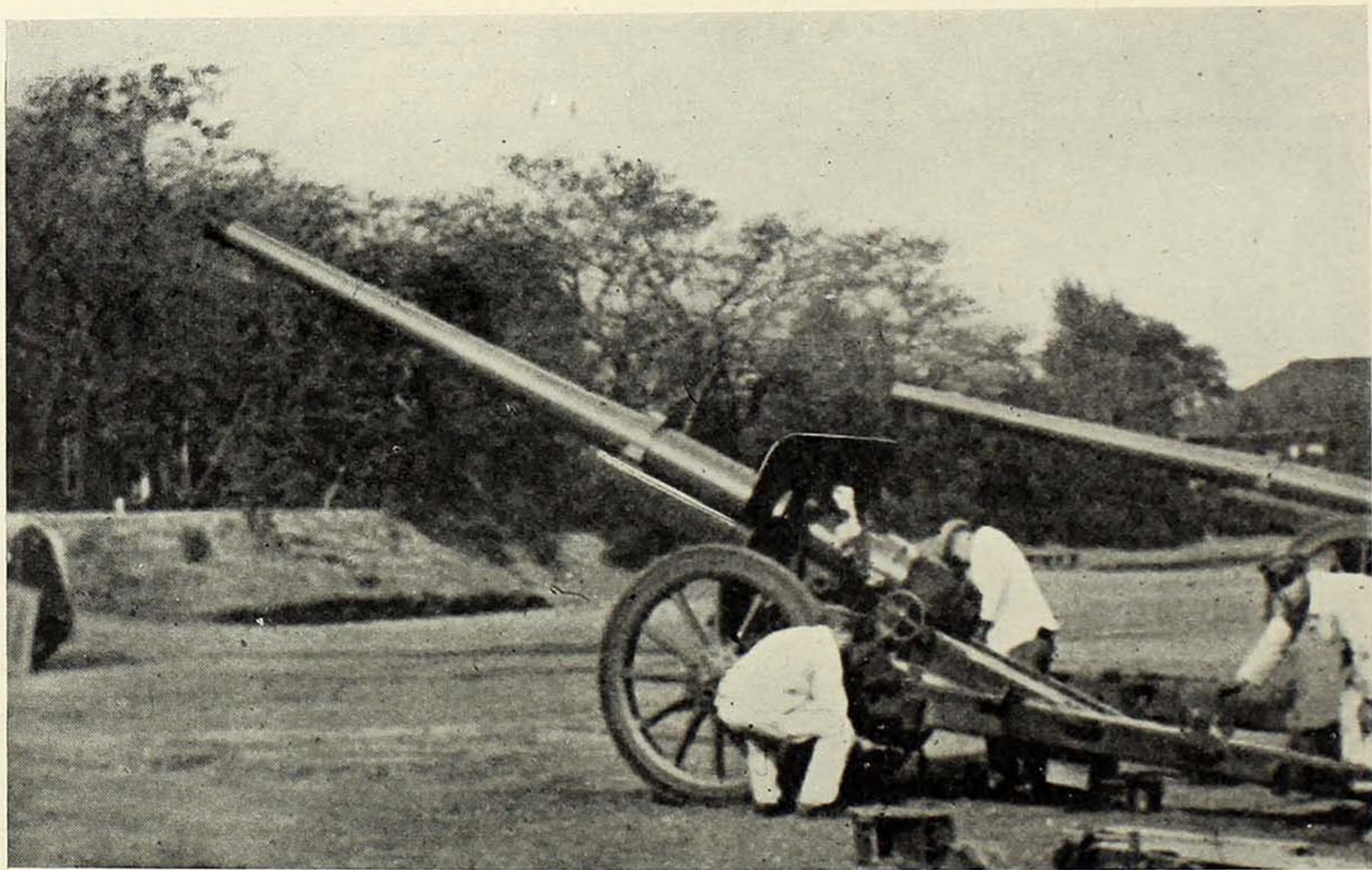


PLATE 6.—105-mm (4.14-in) medium gun. Model 92 (1932)
Max range : 16,400 yds. Weight of shell : 33 lb.

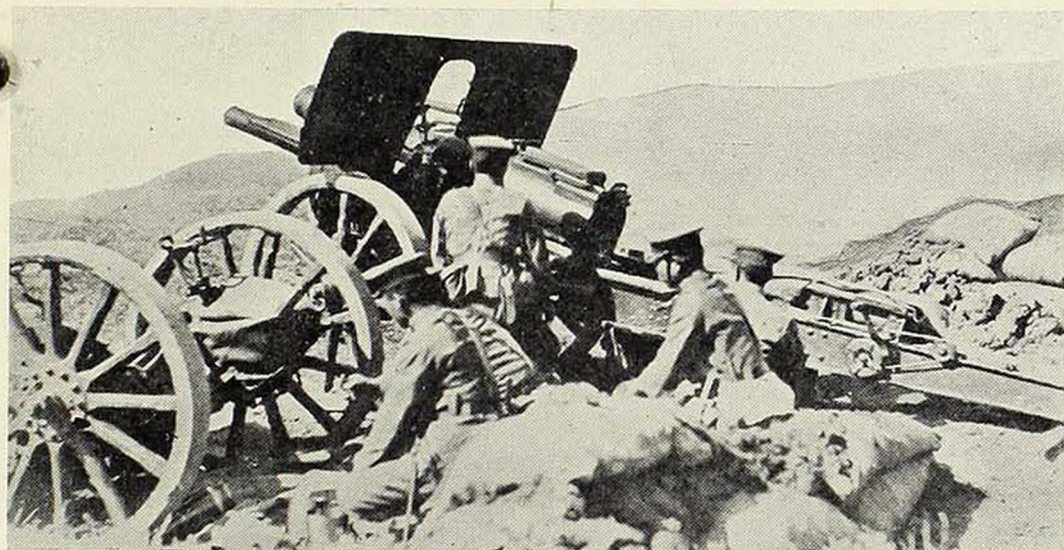


PLATE 7.—150-mm (5.9-in) medium howitzer. TAISHO "4" (1915)
MV : 1,350 fs. Max range : 9,460 yds. Weight of shell : 80 lb.

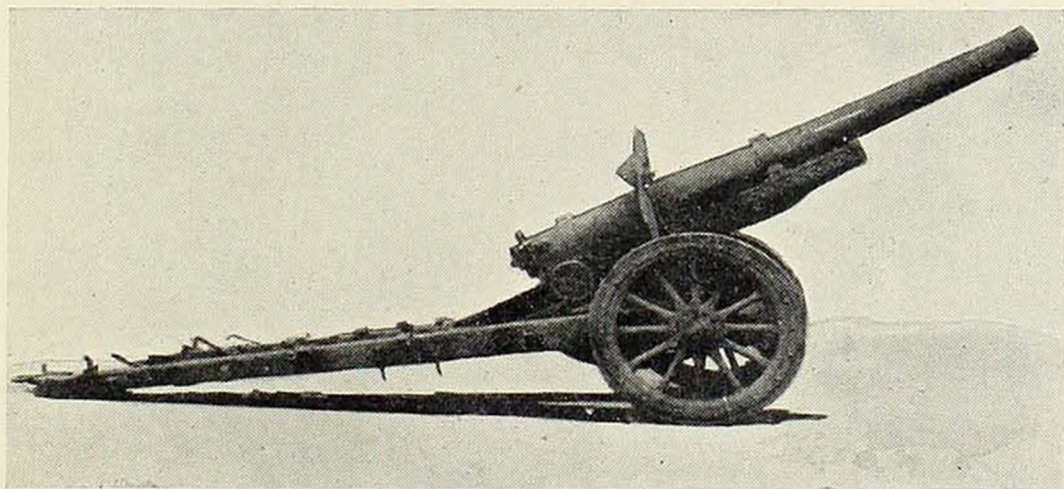


PLATE 8.—150-mm (5.9-in) medium howitzer. Model 96 (1936)
Max range : 11,400 yds. Weight of shell : 80 lb.

SECTION 6

ANTI-AIRCRAFT GUNS

Japanese AA equipments of 25 mm (.98 in) and upwards are of original naval design, modified later for land service.

Of the heavy guns, the 75 mm (2.95 in) types are mounted on a single axle carriage and the 105 mm (4.14 in) type on a double axle carriage. A 127 mm (5 in) naval gun (not shown) is a static equipment.

All the heavy guns are dual purpose, AA—Coast defence weapons. The light guns 20 mm (.79 in) and 25 mm, and the 75 mm guns may also be used in the anti-tank role.

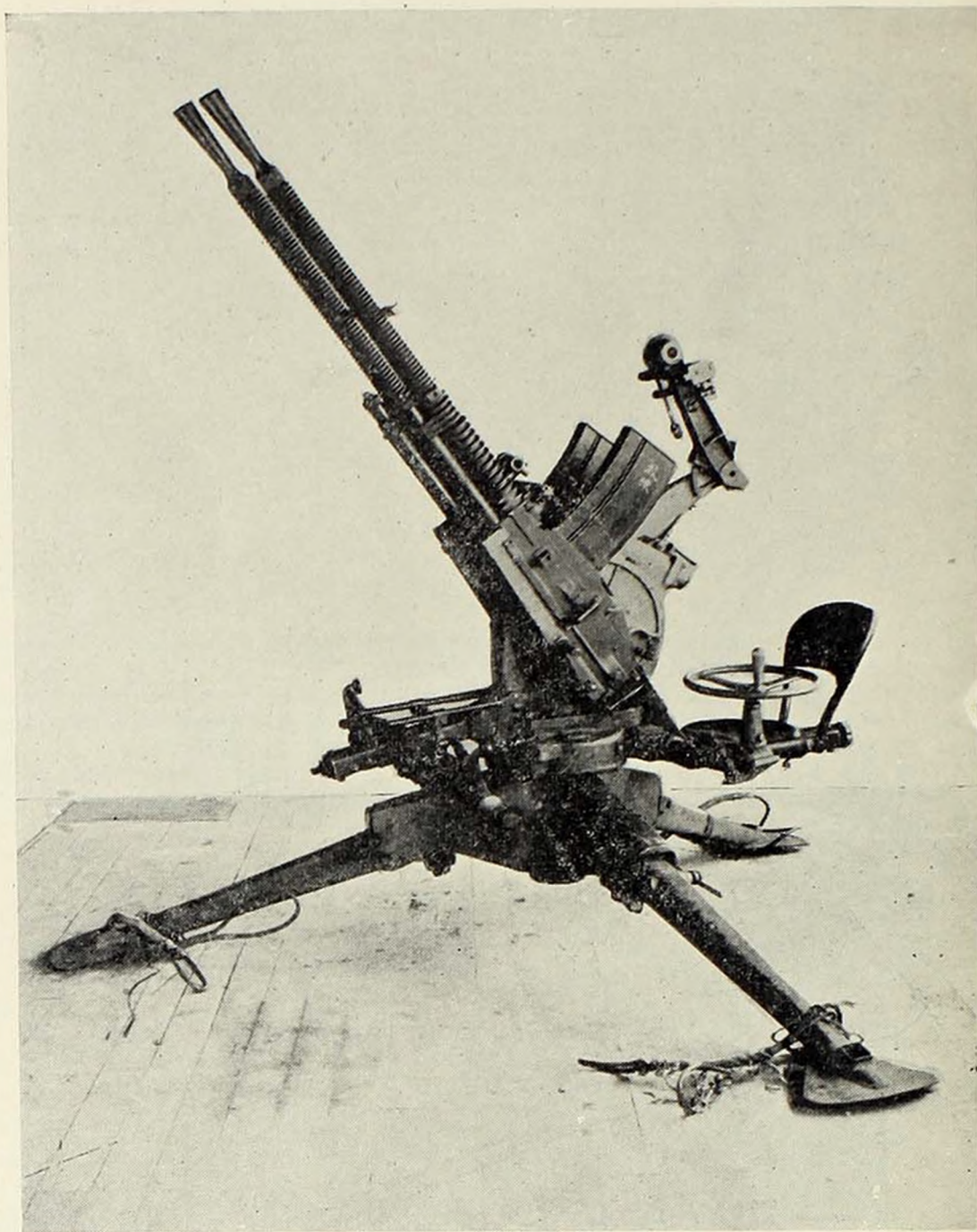


PLATE 1.—13 mm (.51 in) AA/A tk MG, Model 93 (1933) (twin mounting)
 Weight of complete equipment : $7\frac{1}{4}$ cwt. Weight of each gun : 87 lb
 Overall length : 89 ins. Feed : 30 round box magazine. Max vertical
 range : 10,800 ft. Ground sights graduated to 3,600 metres. Ammunition :
 Semi-rimless ball, tracer, AP.

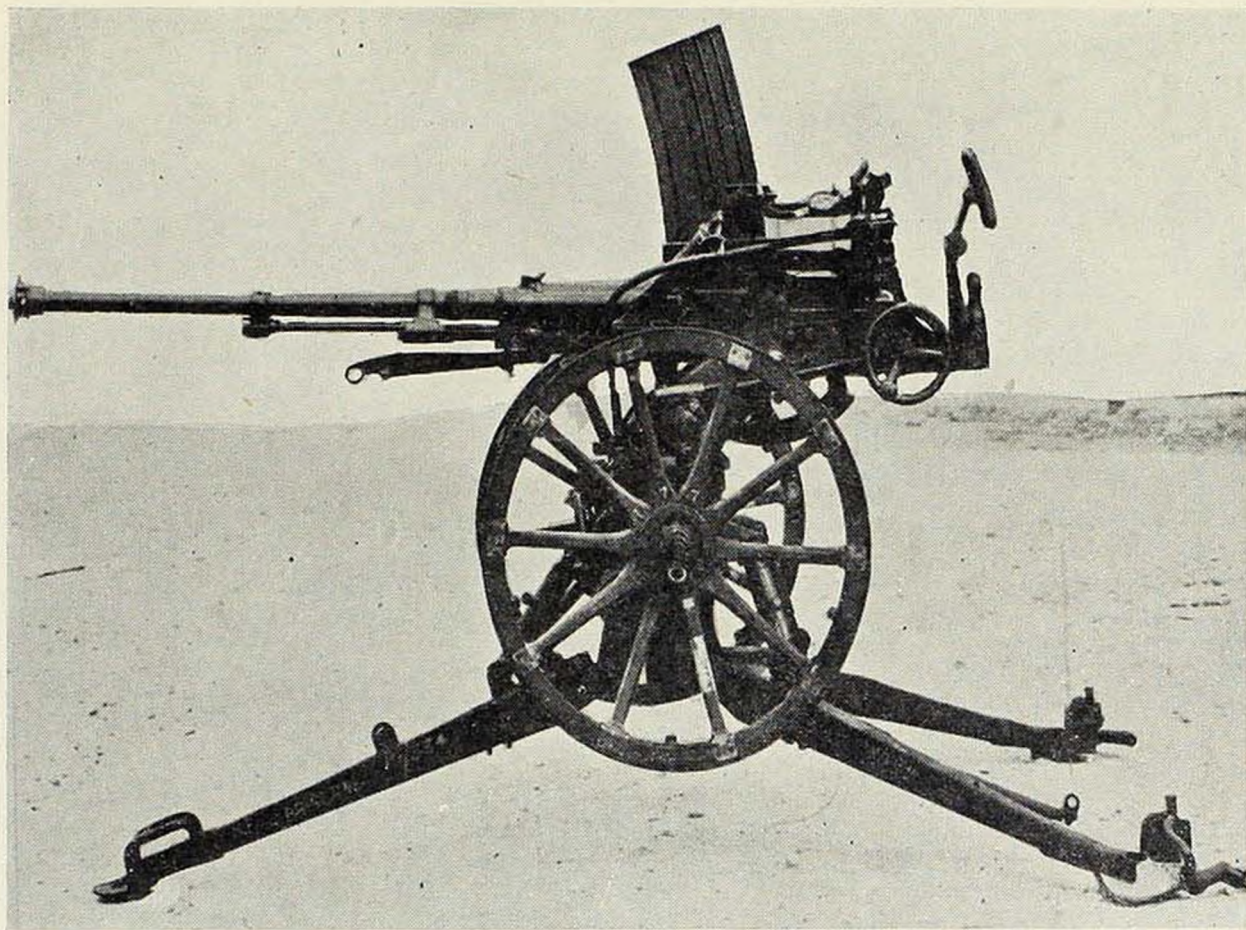


PLATE 2.—20 mm (.79 in) AA/A tk gun. Model 98 (1938)
Muzzle velocity: 2,720 fs. Max horizontal range: 5,450 yds. Max
vertical range: 12,000 ft. Ammunition fired: HE/T, AP/T. Practical
rate of fire: 120 rpm.



PLATE 3.—20 mm (.79 in) AA gun—Oerlikon (Model J Las).

Muzzle velocity : 2,720 fs. Max horizontal range : 5,450 yds. Max vertical range : 12,200 ft. Weight of shell : $4\frac{1}{2}$ oz. Practical rate of fire : 120 rpm.

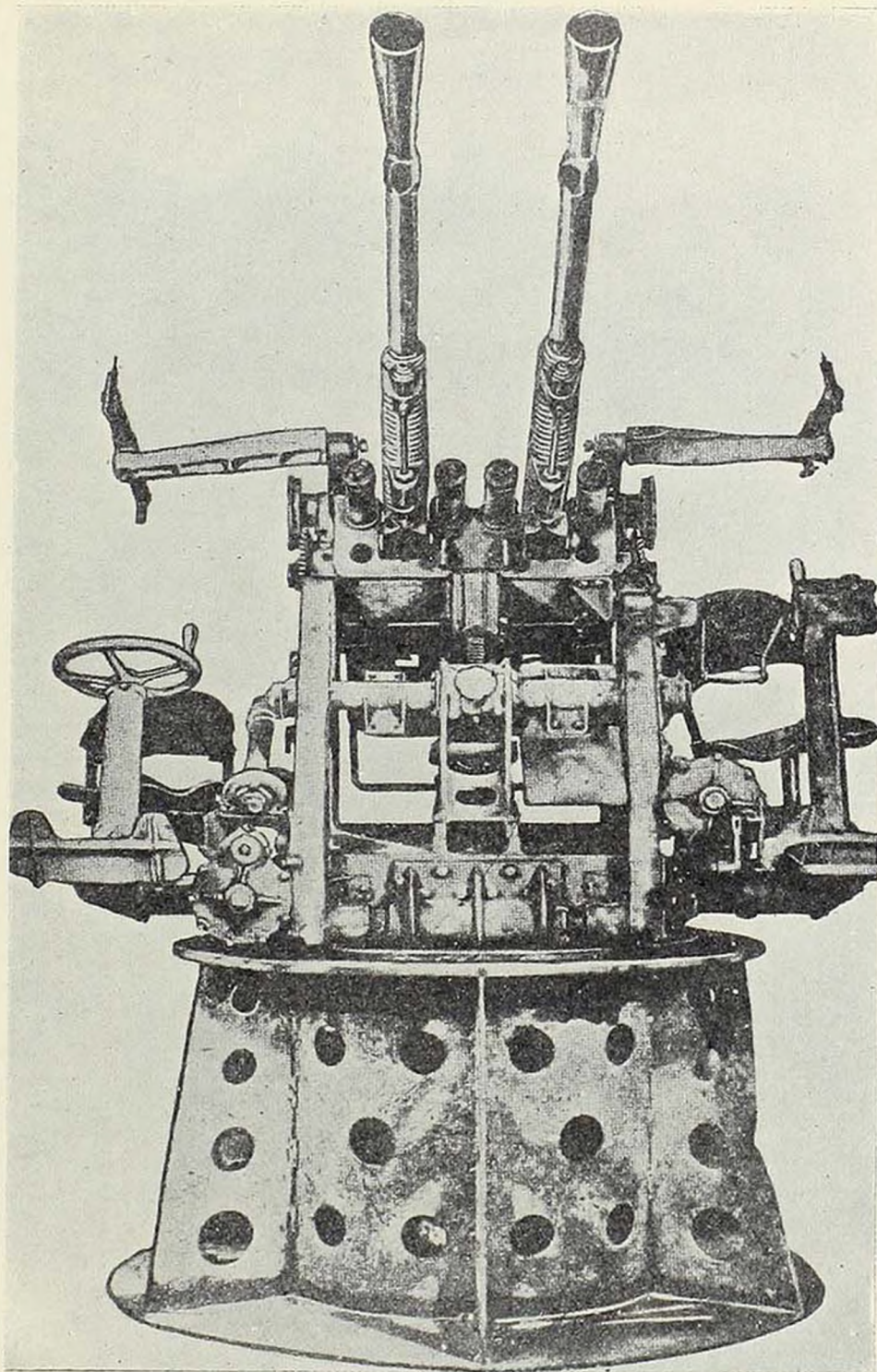


PLATE 4.—25 mm (.98 in) AA/A tk gun. Model 96 (1936) (twin mounting).

Muzzle velocity : 2,978 fs. Max horizontal range : 5,470 yds. Max vertical range : 12,000 ft. Weight of shell : $8\frac{1}{2}$ oz. Practical rate of fire : 240 rpm.

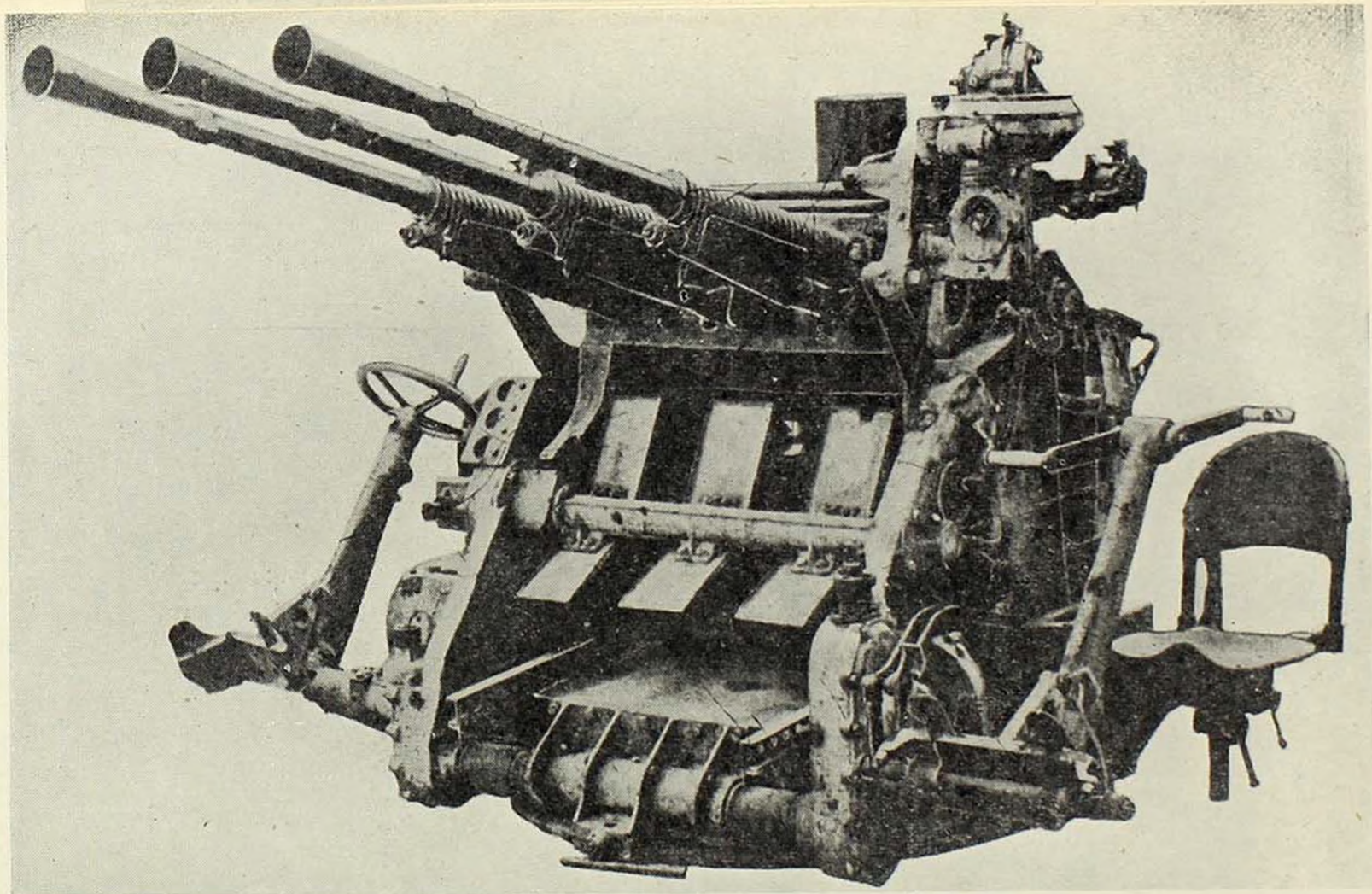


PLATE 5.—25 mm (.98 in) AA/A tk gun. Model 96 (1936) (triple mounting).
Muzzle velocity : 2,978 fs. Max horizontal range : 5,470 yds. Max vertical range : 12,000 ft. Weight of shell :
8½ oz. Practical rate of fire : 360 rpm.

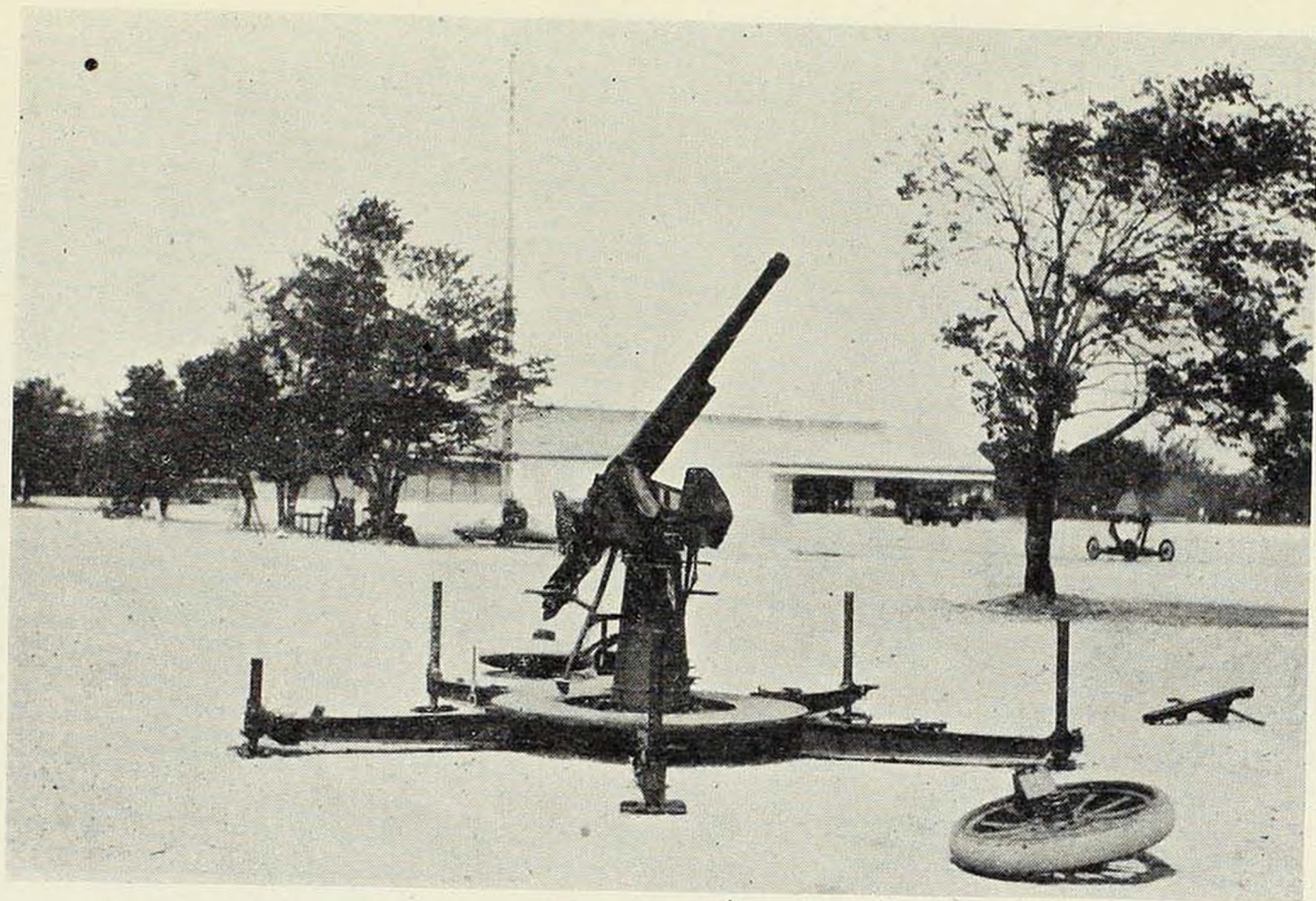


PLATE 6.—75 mm (2.95 in) AA gun. Taisho "11" (1922).
Muzzle velocity: 1,800 fs. Max horizontal range: 11,000 yds. Max
vertical range: 19,600 ft. Weight of shell: 14 lb 8 oz. Practical rate
of fire: 12 rpm. This is obsolescent.

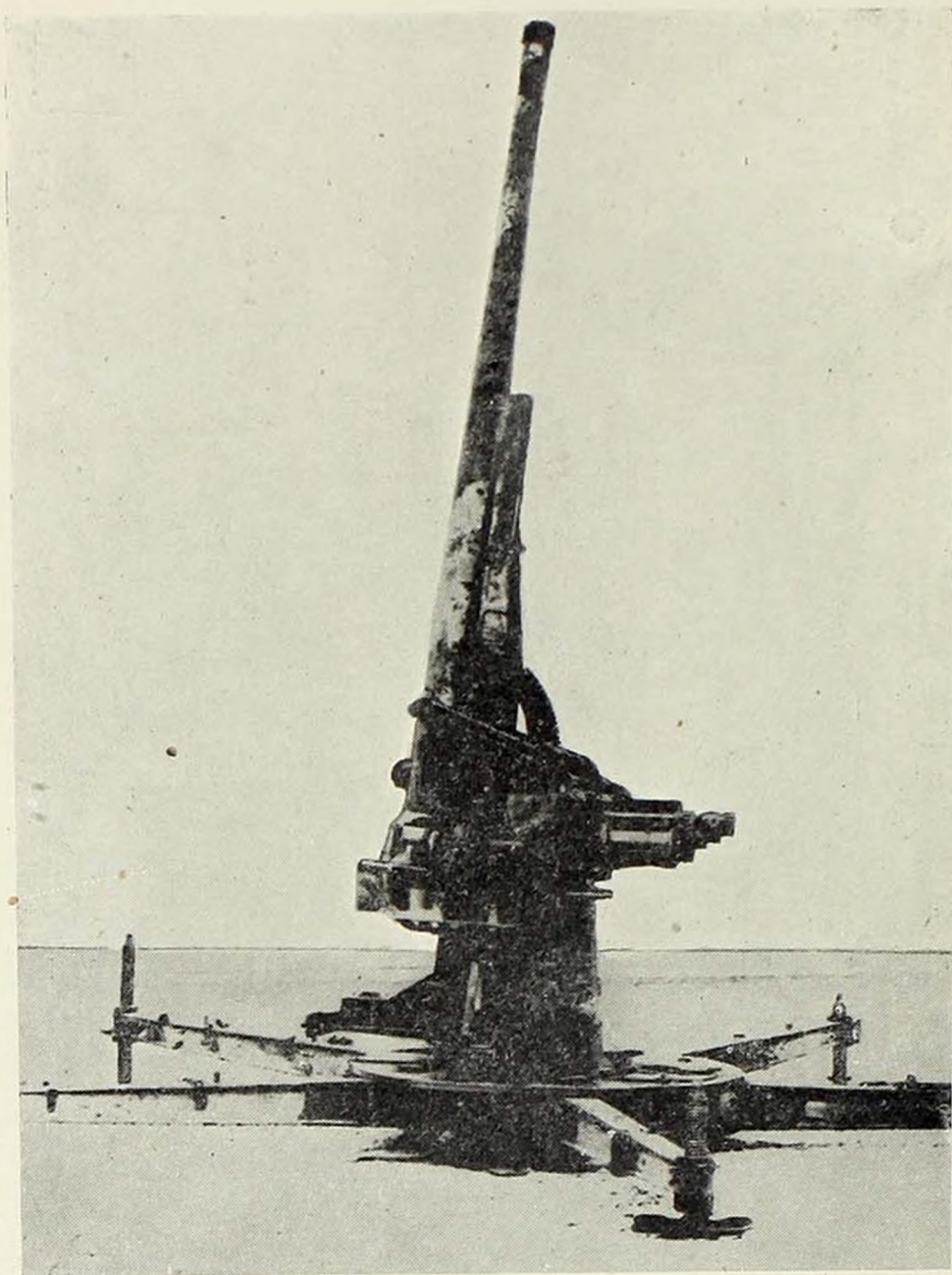


PLATE 7.—75 mm (2.95 in) AA gun. Model 88 (1928).

Muzzle velocity : 2,400 fs. Max horizontal range : 15,100 yds. Max vertical range : 29,000 ft. Weight of shell : 14 lb 5 oz. Practical rate of fire : 20 rpm.

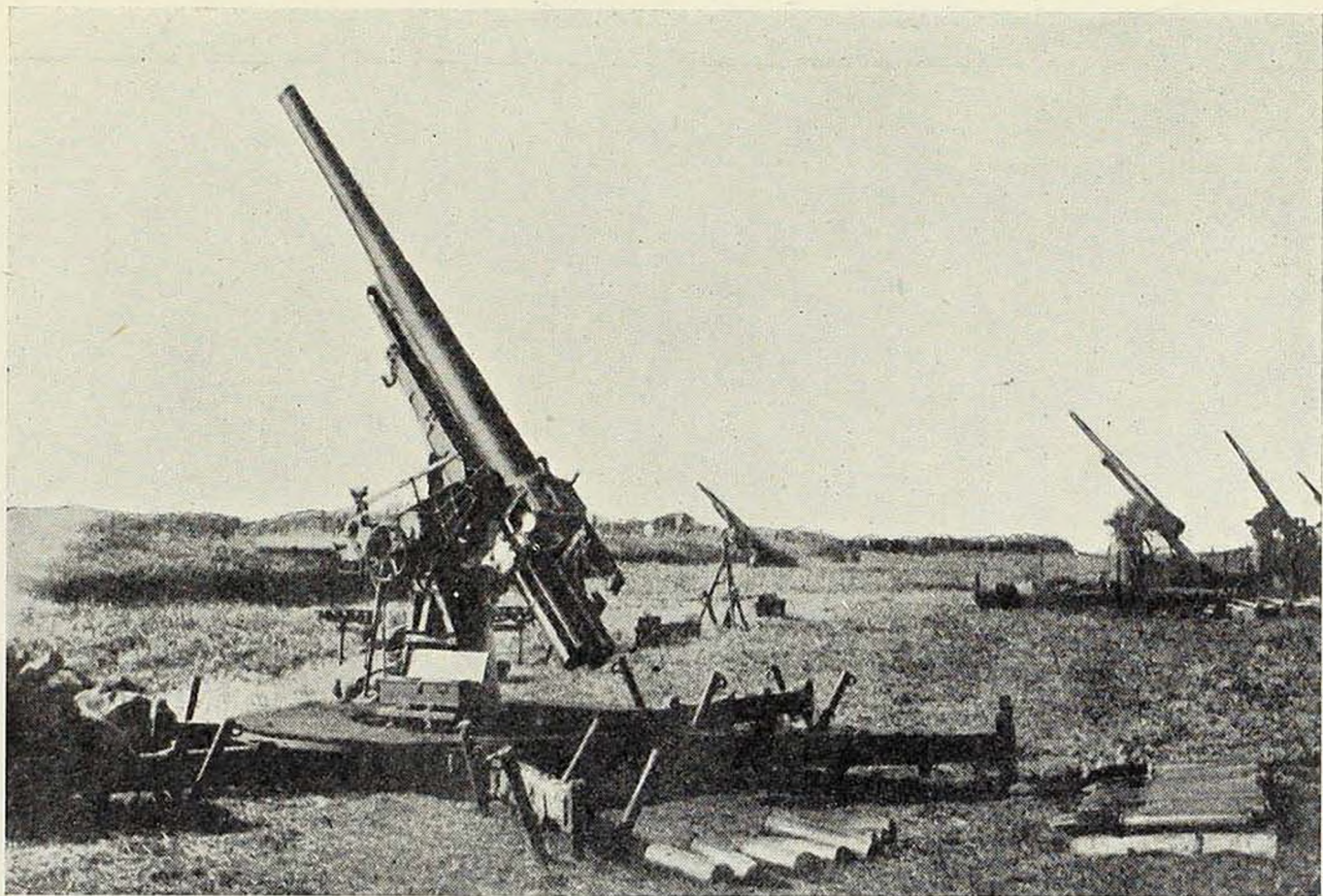


PLATE 8.—105 mm (4.14 in) AA gun. Taisho "14" (1925).
Muzzle velocity: 2,300 fs. Max horizontal range: 19,600 yds. Max
vertical range: 36,000 ft. Weight of shell: 35 lb. Practical rate of
fire: 8 rpm.

SECTION 7

MORTARS AND GRENADE DISCHARGERS

More originality has been displayed by the Japanese in mortar design than in any other type of weapon. In addition to their standard 50 mm (1.97 in) grenade discharger Model 89 (itself an effective and ingenious weapon), and the standard 81 mm (3.18 in) mortar Model 97, several novel types of mortar have been identified.

The 50 mm Model 98 mortar fires a box-shaped HE stick bomb and a demolition tube against wire and pillboxes at comparatively short ranges and should prove effective in this role. The 70 mm (2.75 in) barrage mortar, which projects a canister containing seven small parachute bombs, is believed to be a weapon of defence against low flying aircraft, but may well be used for other tasks.

The "Small" 81 mm mortar Model 99 is less than half the weight of normal 3 in mortars, but fires a 7 lb bomb to approximately 2,000 yds. A similar weapon has recently been introduced into the German Army.

The 90 mm (3.54 in) mortar is chiefly remarkable for its substantial recoil mechanism and fires both HE and incendiary ammunition.

150 mm (5.9 in) mortars have also been identified but no photographs are available to date.

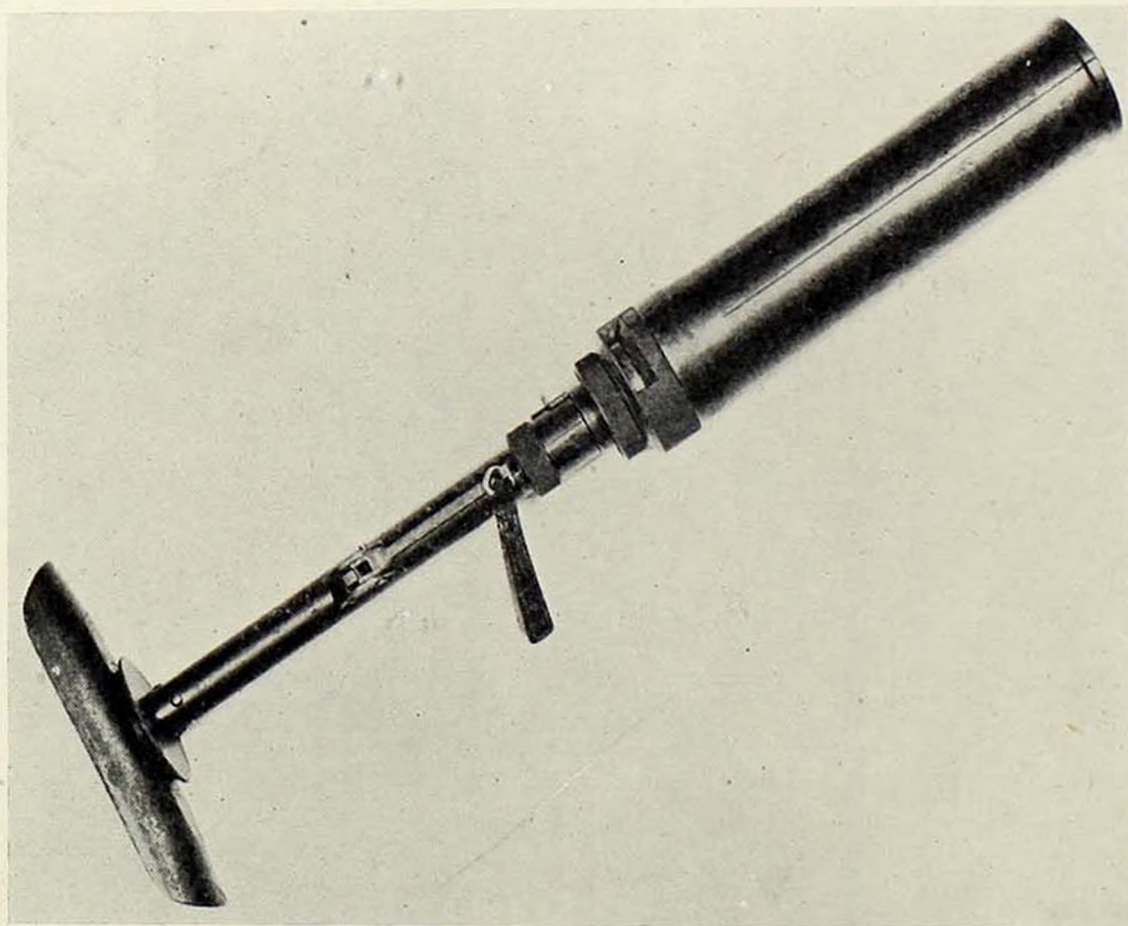


PLATE 1.—50 mm (1.97 in) grenade discharger TAISHO " 10 " (1921)
Weight: $5\frac{1}{2}$ lb. Overall length: 20 in. Ammunition: Model 91
grenade, weight $18\frac{3}{4}$ oz. Max range: 175 yds. Smoke and signal grenades
are also fired.

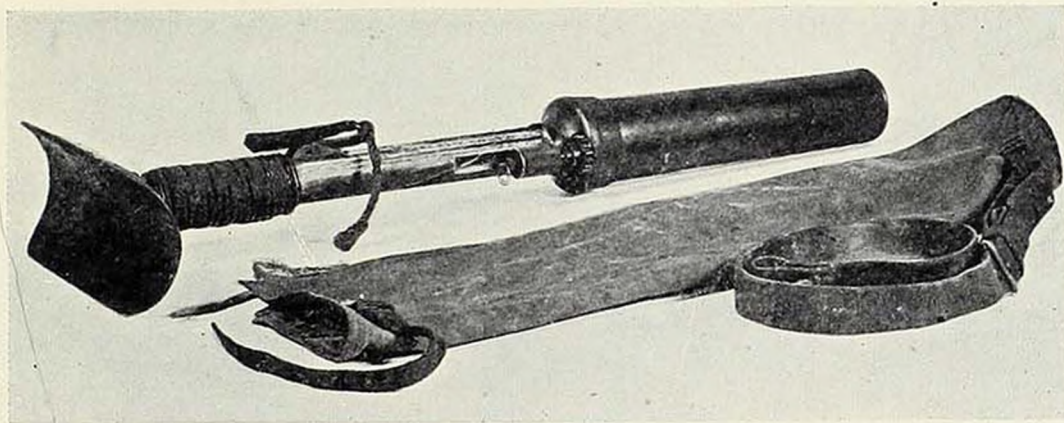


PLATE 2.—50 mm (1.97 in) grenade discharger Model 89 (1929).
 Weight: $10\frac{1}{4}$ lb. Overall length: 24 in. Ammunition: (a) Model 89 bomb. Weight: $1\frac{3}{4}$ lb. Weight HE filling 5 oz. Max range 710 yds.
 (b) Model 91 grenade. Weight: $18\frac{3}{4}$ oz. Max range 175 yds. A rifled muzzle-loading weapon.

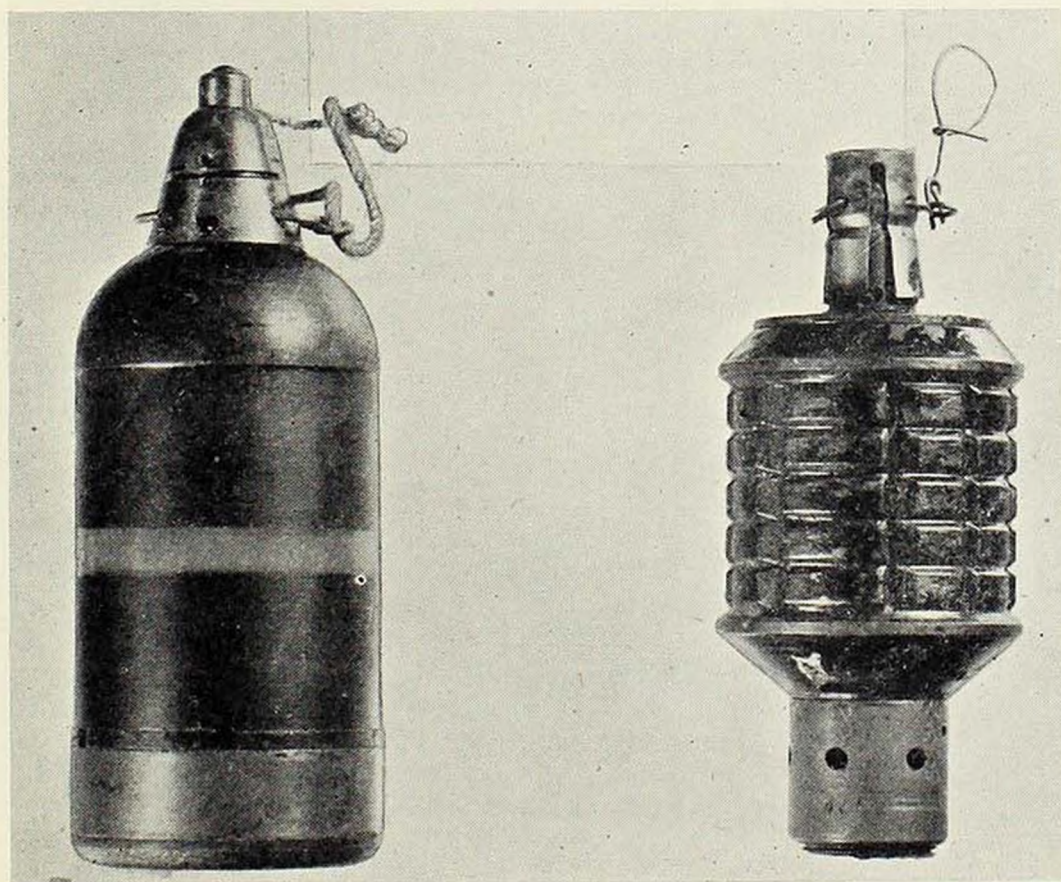


PLATE 3.—Ammunition for 50 mm (1.97 in) grenade discharger.
 Model 89 (1929). (See Plate 2).
 Left: Model 89 bomb. Right: Model 91 grenade

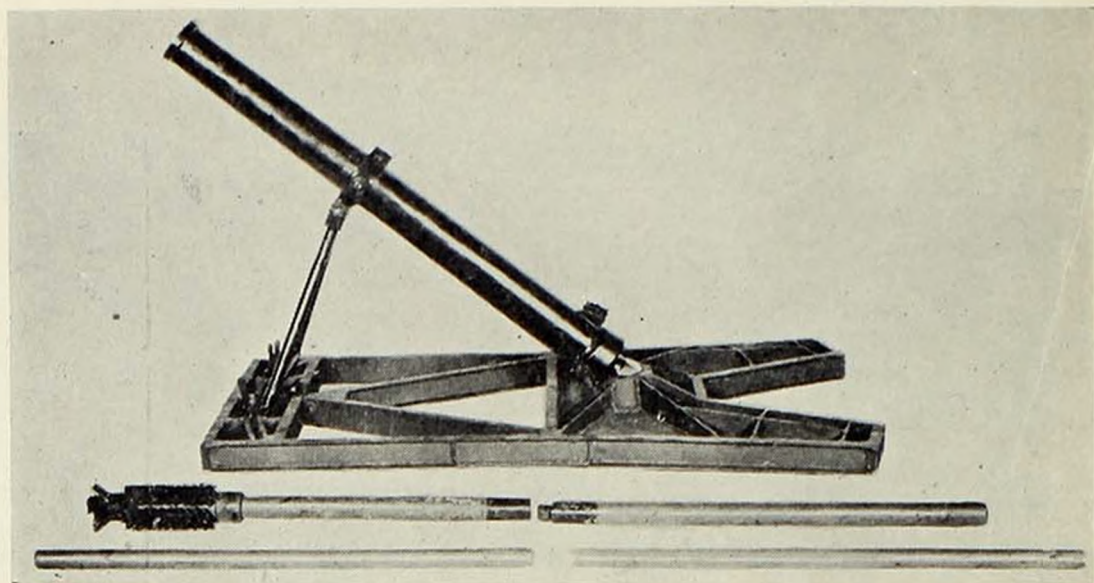


PLATE 4.—50 mm (1.97 in) mortar Model 98 (1938).
 Total weight : 48 lb. Ammunition : (a) HE Stick bomb : Total weight 14 lb. Weight filling : 7 lb. Max range : Approx 450 yds.
 (b) Demolition tube. Total weight : $18\frac{1}{2}$ lb. Weight filling : 5 lb. Max range : Approx 320 yds.

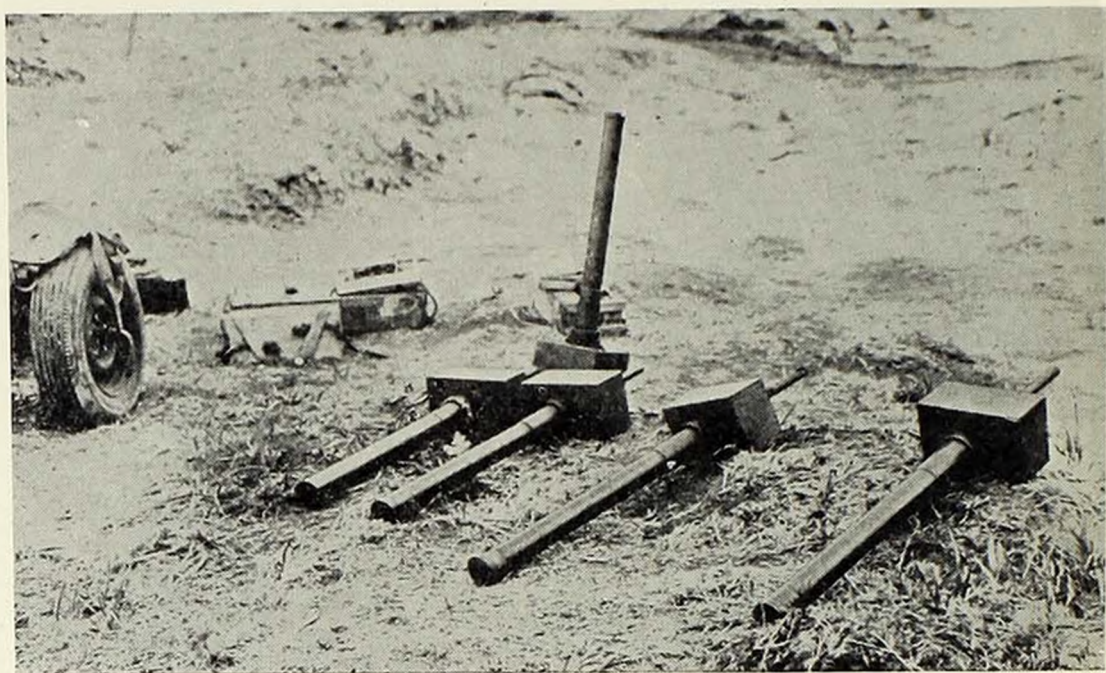


PLATE 5.—70 mm (2.75 in) barrage mortar.
 A smooth bore percussion fired weapon firing a projectile containing seven small high explosive parachute bombs. Length overall : 75 in.

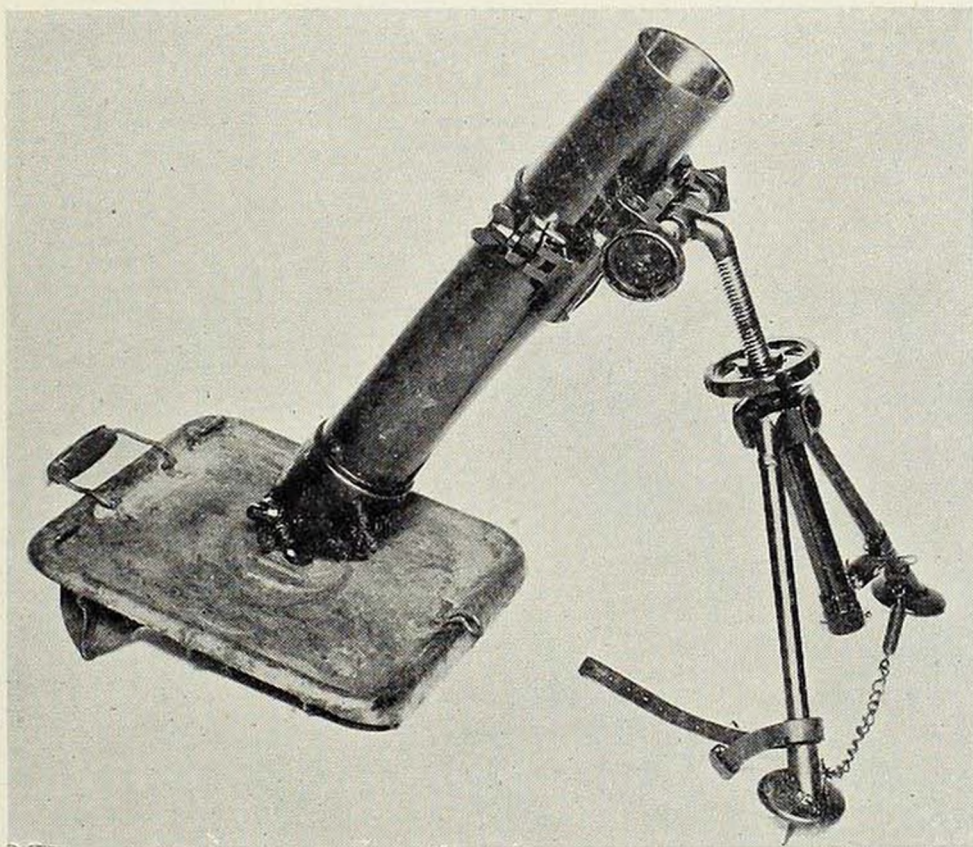


PLATE 6.—81 mm (3.18 in) small mortar Model 99 (1939).
Weight : 52 lb. Overall length barrel : $25\frac{1}{4}$ in. Weight of bomb : 7 lb.
Max range : 2,000 yds (approx).

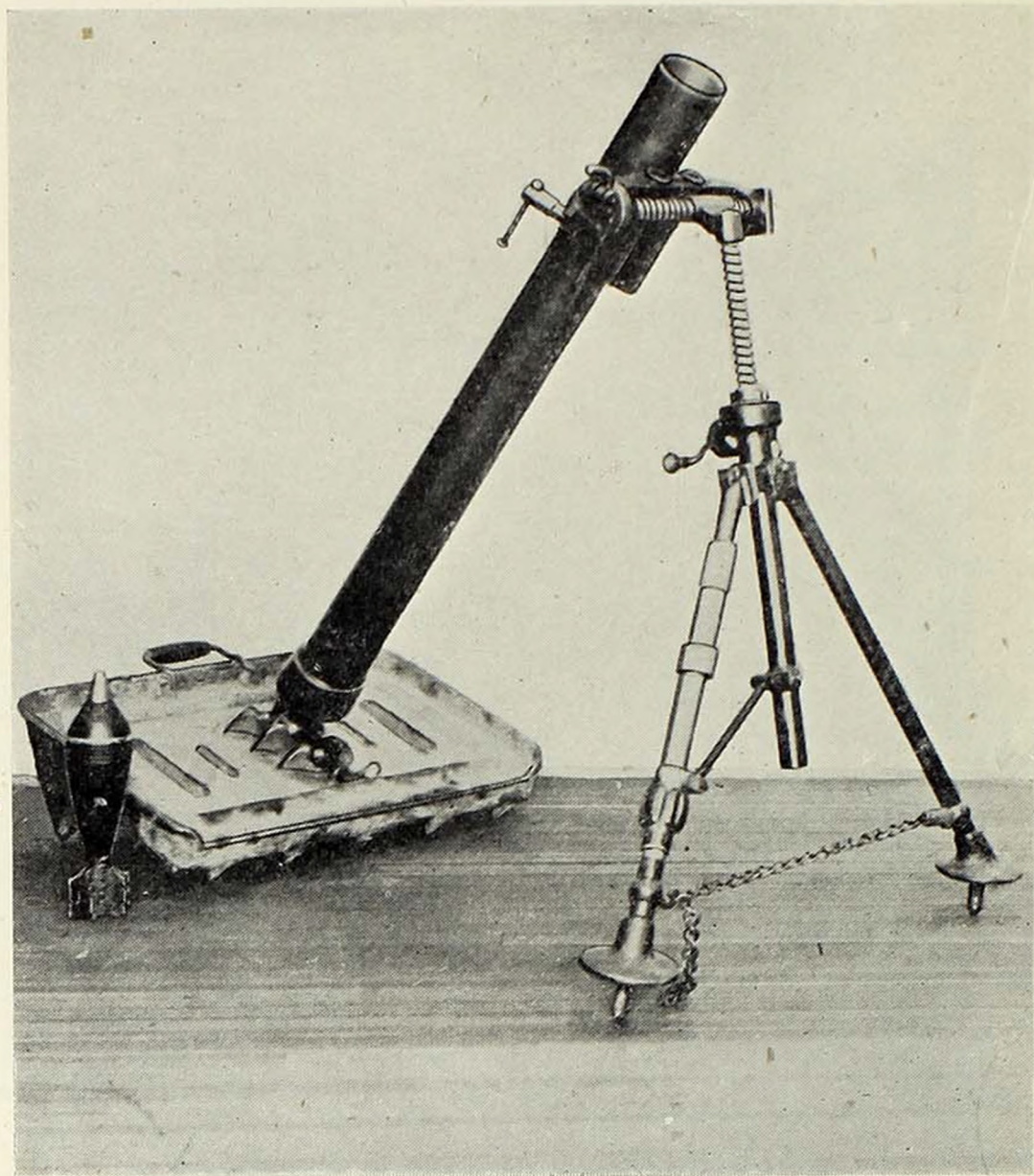


PLATE 7.—81 mm (3.18 in) mortar Model 97 (1937).

Weight : 145 lb. Overall length barrel : $49\frac{1}{2}$ in. Weight of bomb 7 lb.
Max range : Approx 3,100 yds.

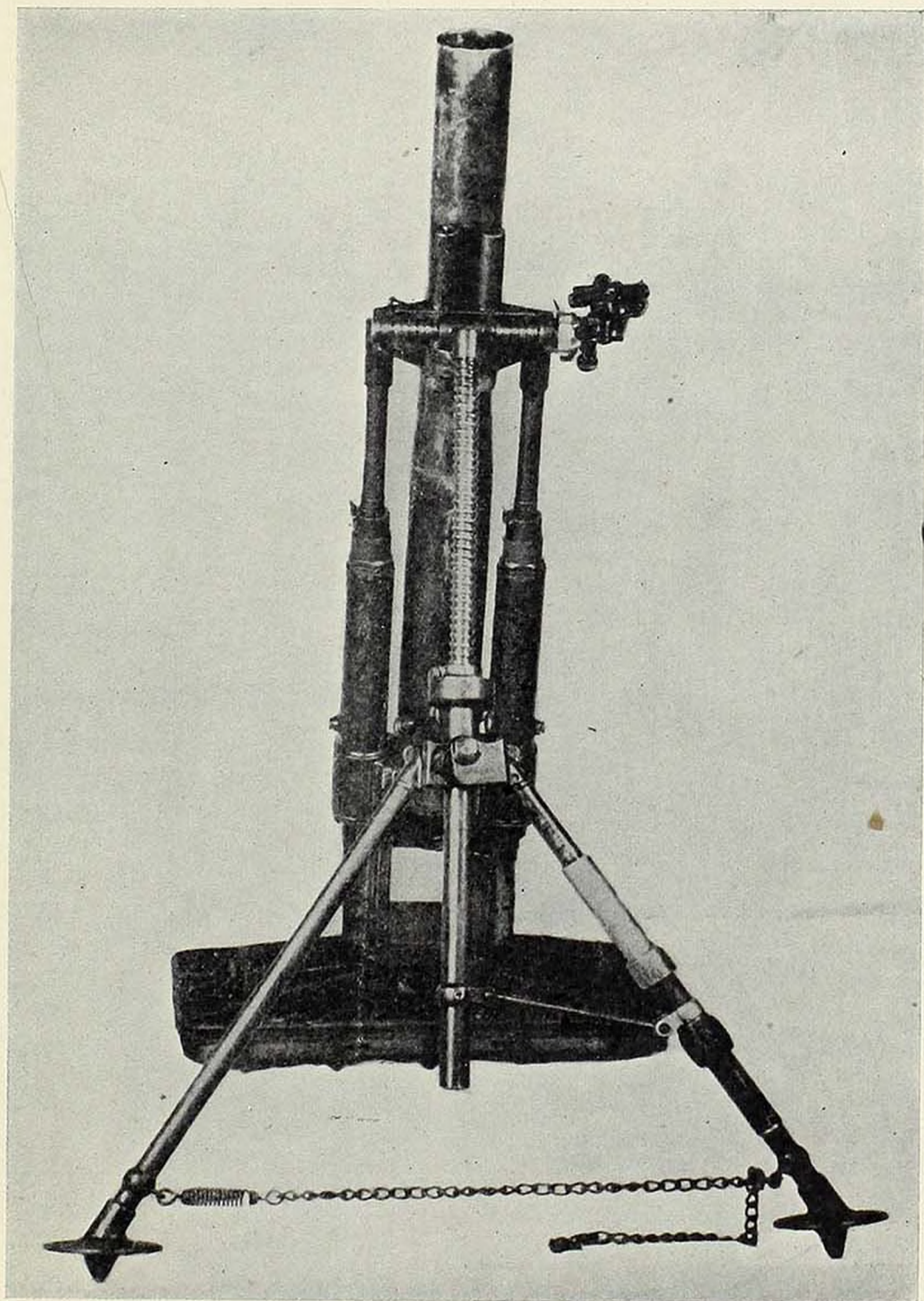


PLATE 8.—90 mm (3.54 in) mortar Model 94 (1934).
Weight : 340 lb. Overall length of barrel : 50 in. Weight of bomb :
11½ lb. Max range : 4,150 yds.

SECTION 8

SMALL ARMS

The Japanese have borrowed extensively from European sources in the design of their small arms, particularly German, French and Czech. In general, however, the range of small arms encountered so far, although adequate by pre-war standards, does not impress when compared with the latest Allied or German weapons. It is probable that more modern weapons are still to be identified and these may show considerable improvements in design, particularly if German help has been enlisted. Only one instance of direct German influence in this field has been met to date, the hollow charge rifle grenade (Plate 5), but more instances may be expected, particularly in anti-tank weapons in which the Japanese are comparatively weak.

One feature of interest is the change over from 6.5 mm (.256 in) to 7.7 mm (.303 in) as the standard small arms calibre. This appears to be taking some time as 6.5 mm weapons are still widely encountered.

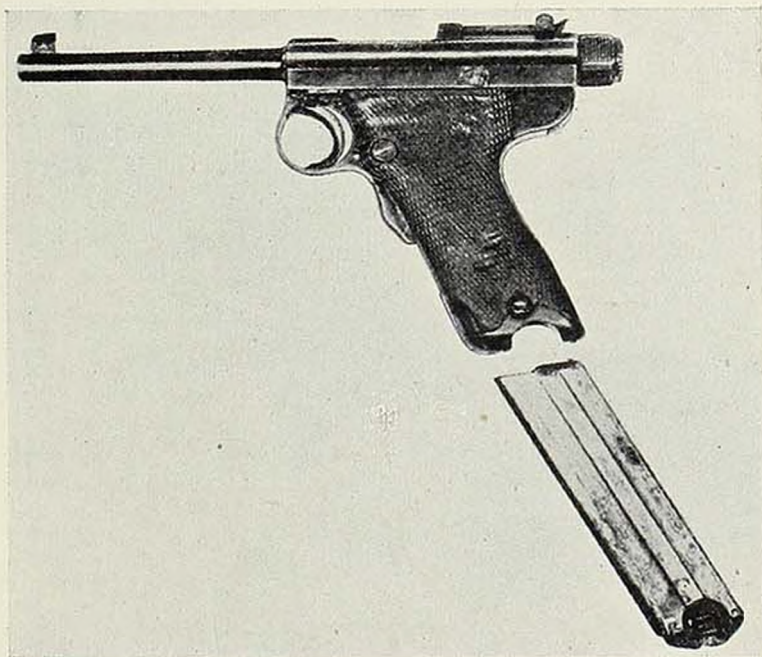


PLATE 1.—8 mm (.315 in) Self-loading Pistol, " NAMBU " Model.

Weight : 31 oz. Feed : 8 round magazine in butt. Ammunition : Semi-rimless ball.

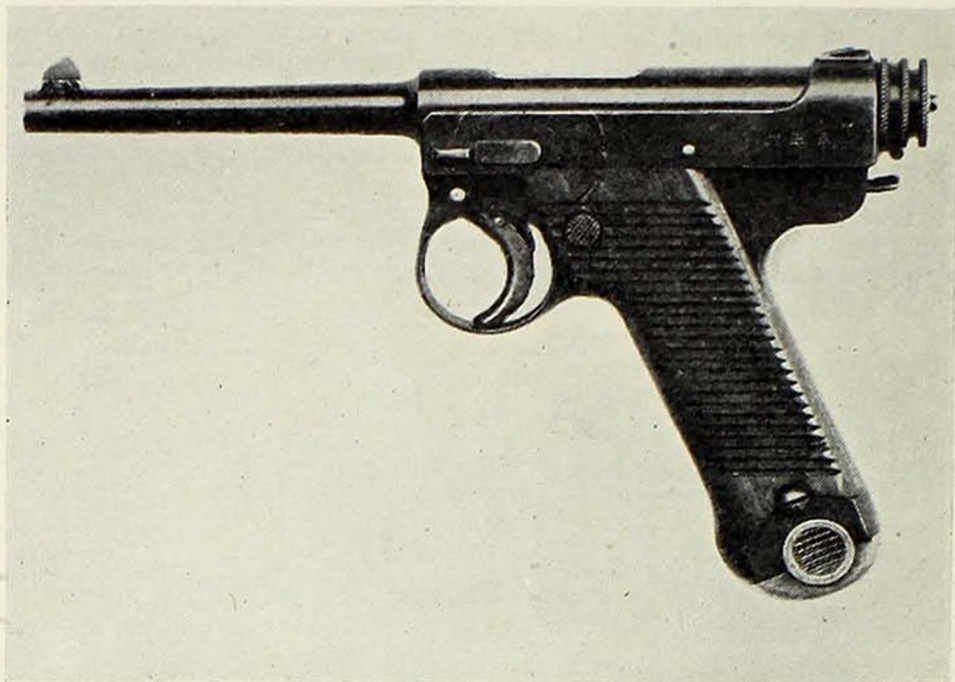


PLATE 2.—8 mm (.315 in) Self-loading Pistol, TAISHO " 14 " (1925).
Weight : 2 lb. Feed : 8 round magazine in butt. Ammunition : Semi-rimless ball.

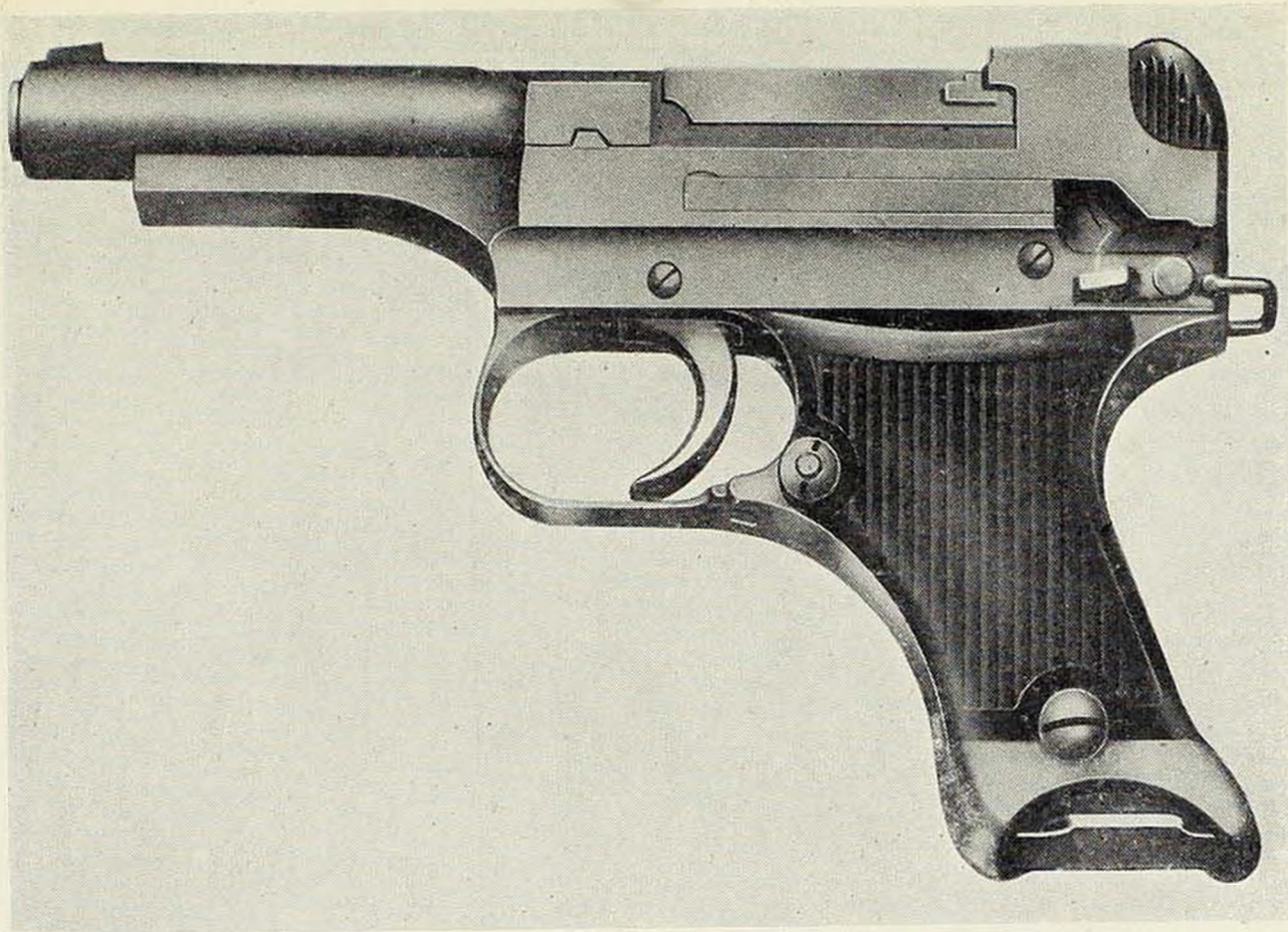


PLATE 3.—8 mm (.315 in) Self-loading Pistol, Model 94 (1934).
Weight : 27 oz. Feed : 6 round magazine in butt. Ammunition : Semi-
rimless ball.

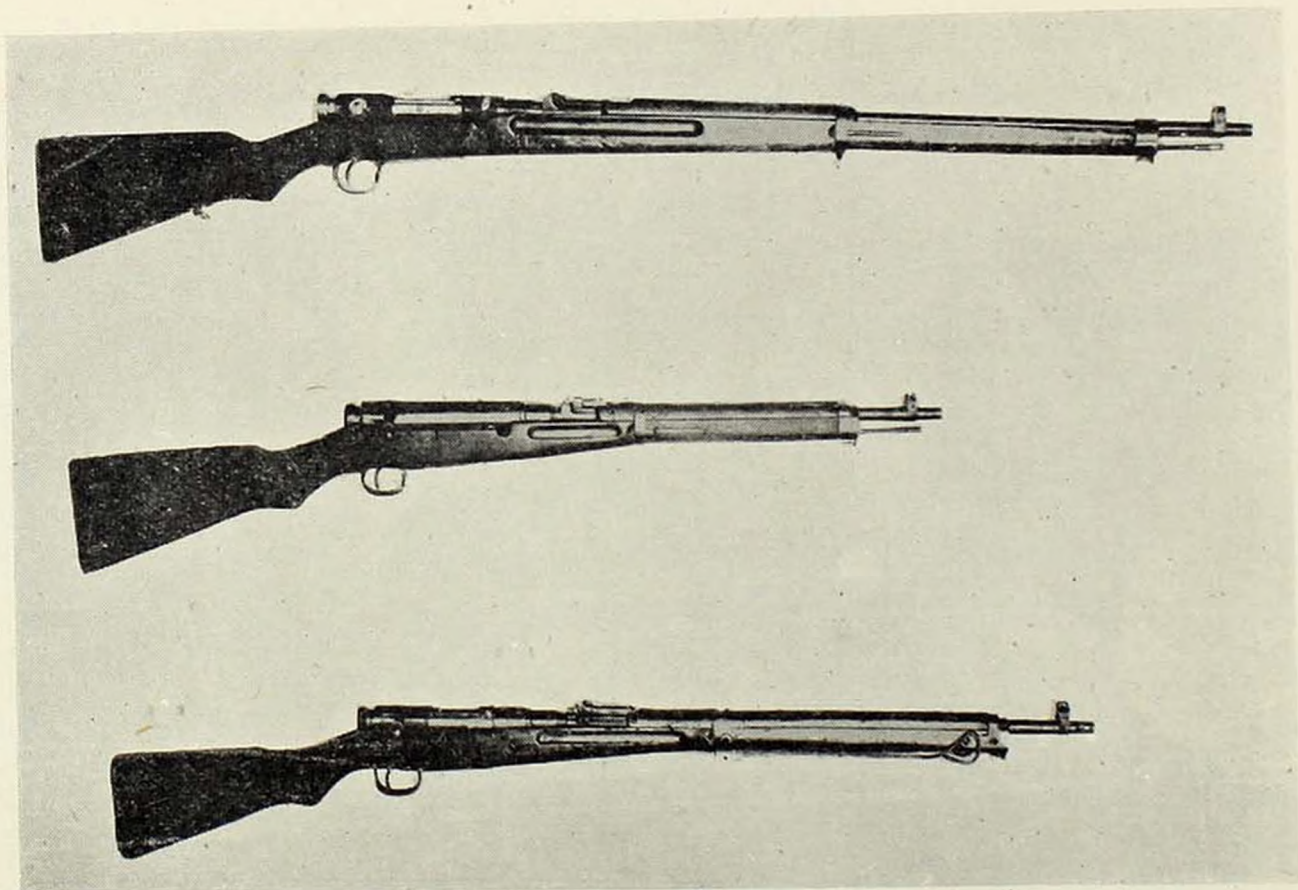


PLATE 4.—Rifles.

Top: 6.5 mm (.256 in) long rifle, Meiji "38" (1905). Overall length: 50.2 in. Centre: 6.5 mm (.256 in) short rifle, Meiji "38" (1905). Overall length: 38½ in. Bottom: 7.7 mm (.303 in) short rifle, Model 99 (1939). Overall length: 45 in. Another type of 6.5 mm carbine and a long 7.7 mm rifle are in service. Telescopic sights are also used.

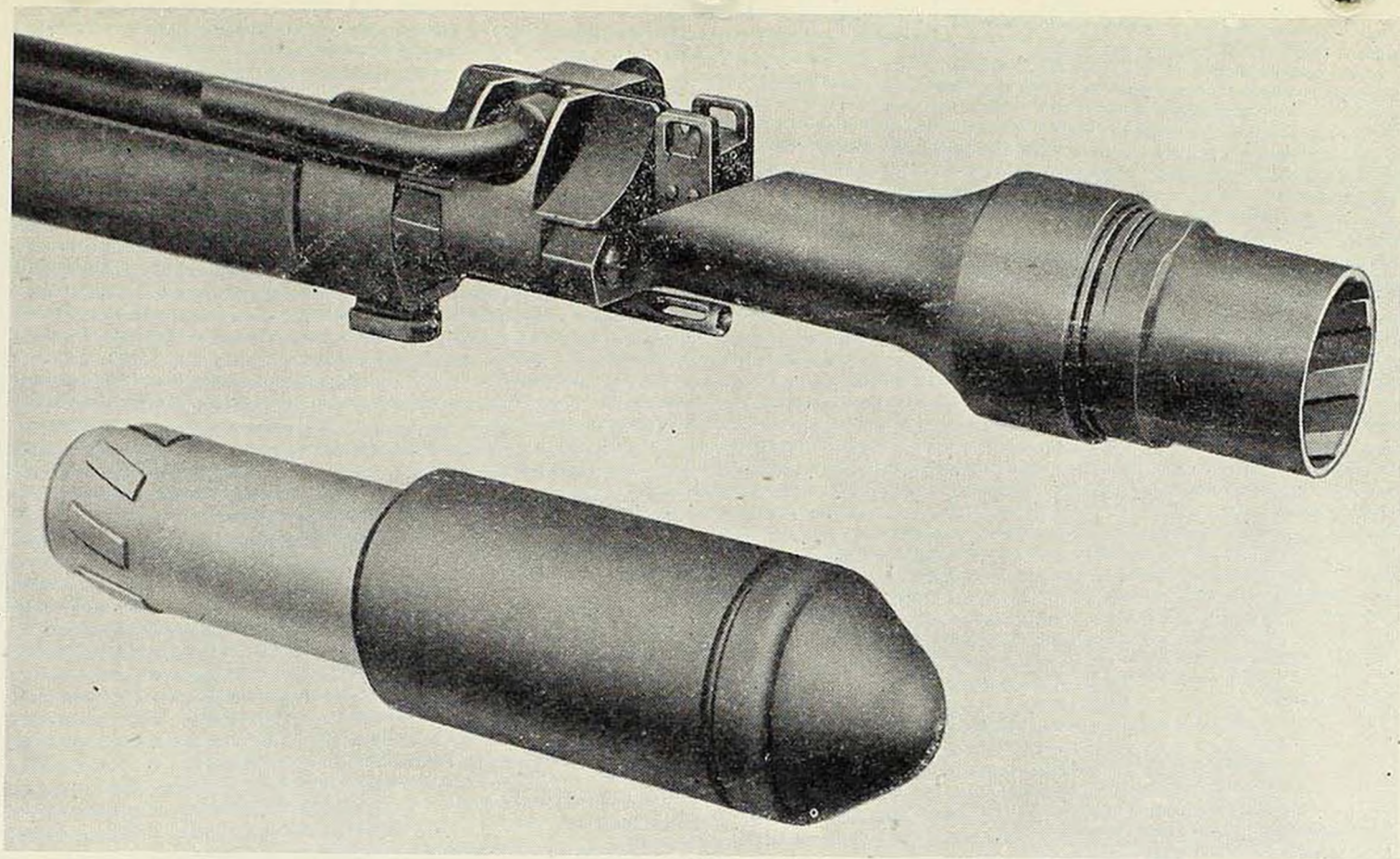


PLATE 5.—Rifle Grenade Discharger and Grenade.
The discharger is fitted to the standard 6.5 mm (.256 in) rifle and fires a
hollow charge A tk projectile. A copy of a German weapon.

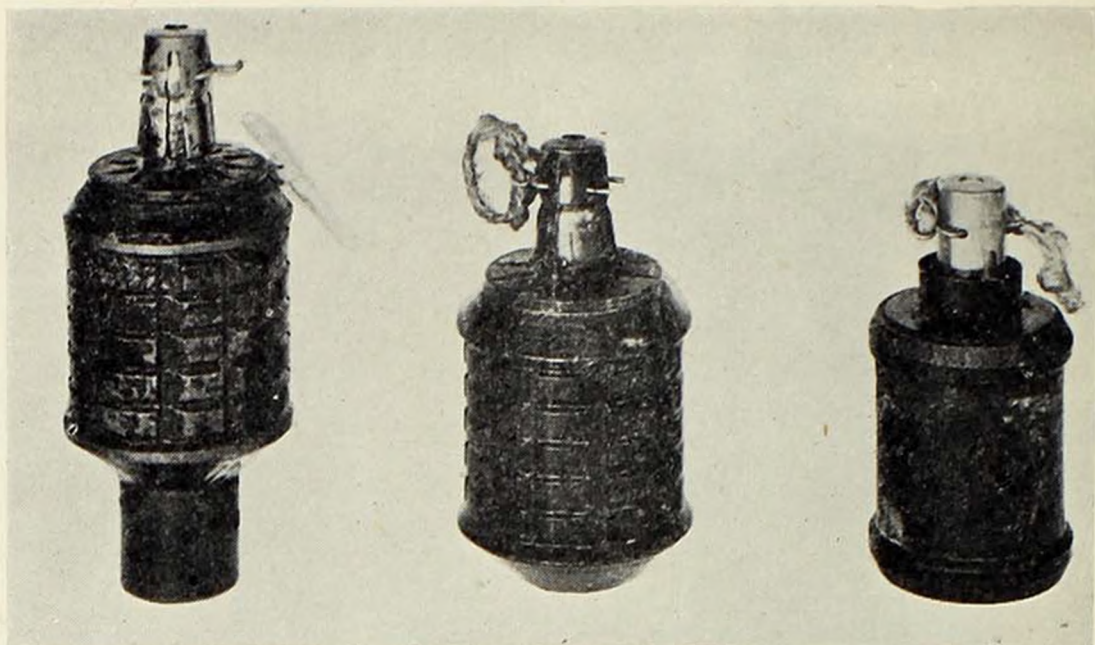


PLATE 6.—Grenades.

Left : Model 91 (1931) grenade. Weight : $18\frac{3}{4}$ oz. Thrown, fired from Model 89 grenade discharger or from a rifle spigot discharger in which case it is fitted with a finned tail unit. Delay : 8-9 seconds. Centre : Model 97 (1937) grenade. Weight : 1 lb. Delay : 4-5 seconds. Thrown. Right : Model 99 (1939) " Kiska " grenade. Weight : 10 oz. Delay 4-5 seconds. Thrown, or fired from a rifle cup discharger.

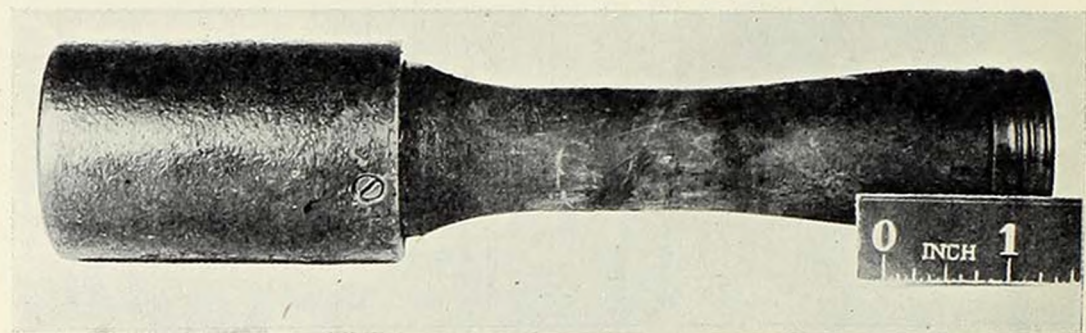


PLATE 7.—HE Stick Grenade.

Weight : 1 lb. $3\frac{1}{2}$ oz. Overall length : 7.87 in. Delay : 4-5 seconds.

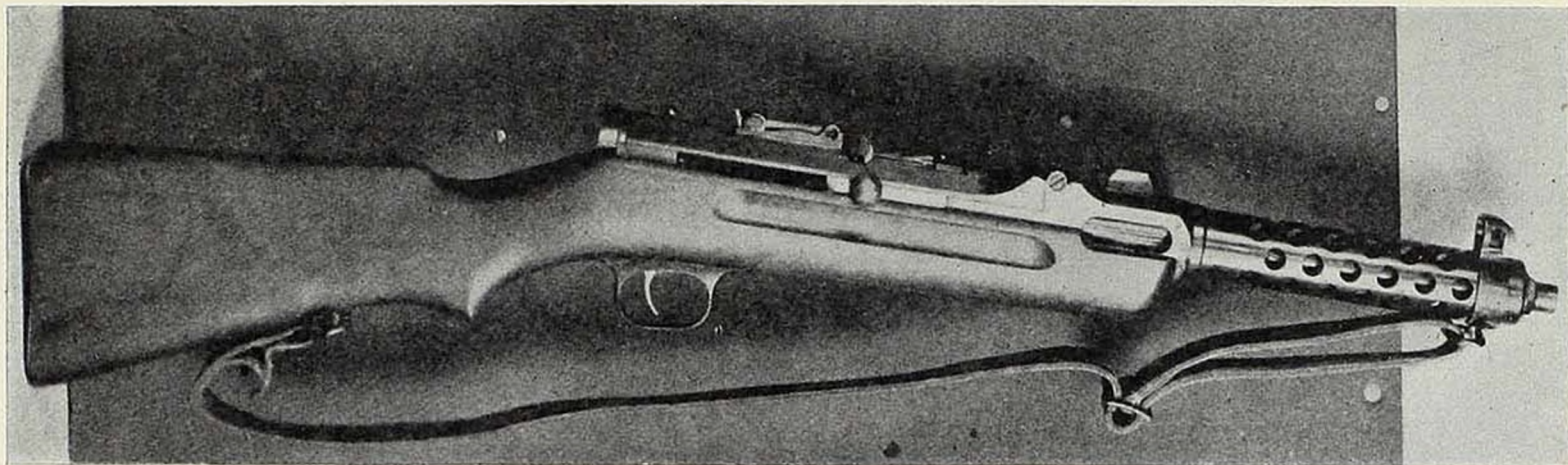


PLATE 8.—7.63 mm (.30 in) machine carbine (Solothurn).
Weight (without magazine): $9\frac{1}{2}$ lb. Length: $32\frac{1}{4}$ in. Feed: 32 round
box magazine. Cyclic rate of fire: 700 rpm.

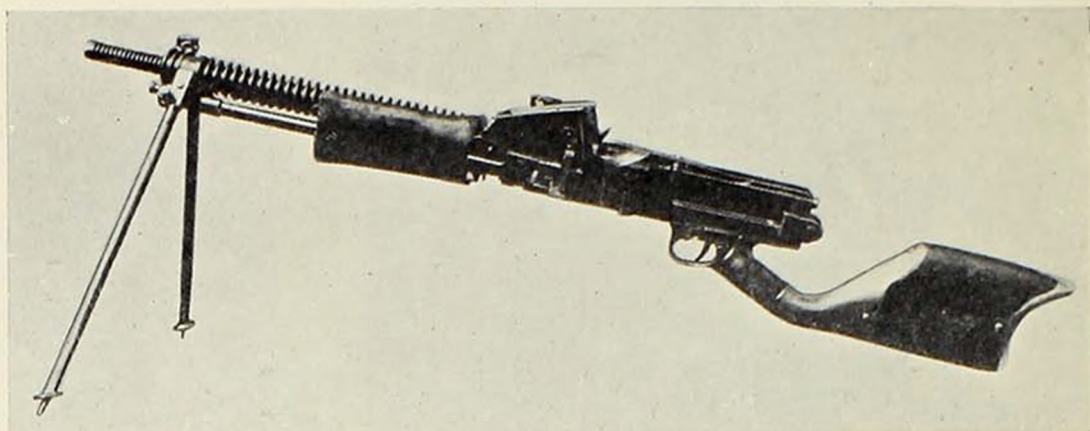


PLATE 9.—6.5 mm (.256 in) LMG TAISHO " 11 " (1922).

Weight : $22\frac{1}{2}$ lb. Overall length : $43\frac{1}{2}$ in. Feed : Hopper, loaded with six 5 round clips. Cyclic rate of fire : 500 rpm. Ammunition : semi-rimless. Sighted to 1,500 metres.

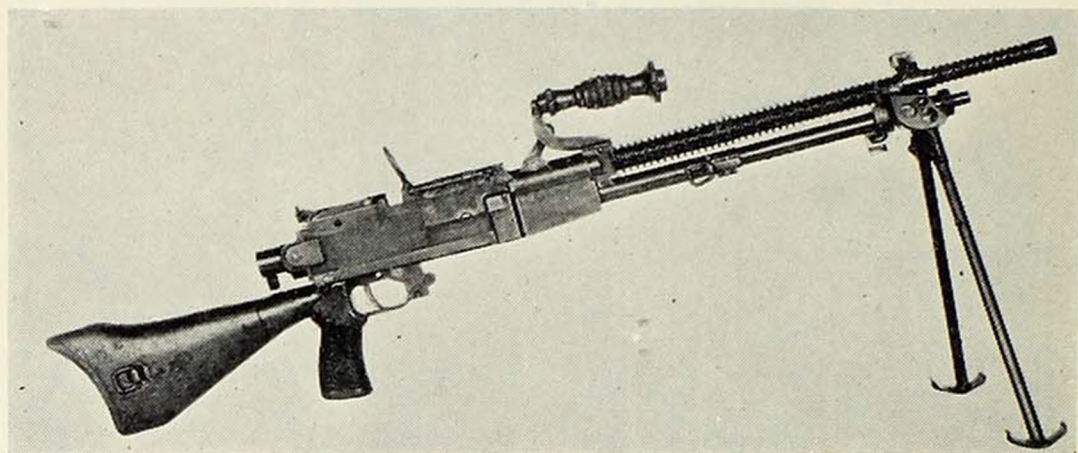


PLATE 10.—6.5 mm (.256 in) LMG Model 96 (1936).

Weight : 20 lb. Overall length : 42 in. Feed : 30 round box magazine. Cyclic rate of fire : 550 rpm. Ammunition : semi-rimless. Sighted to 1,500 metres.

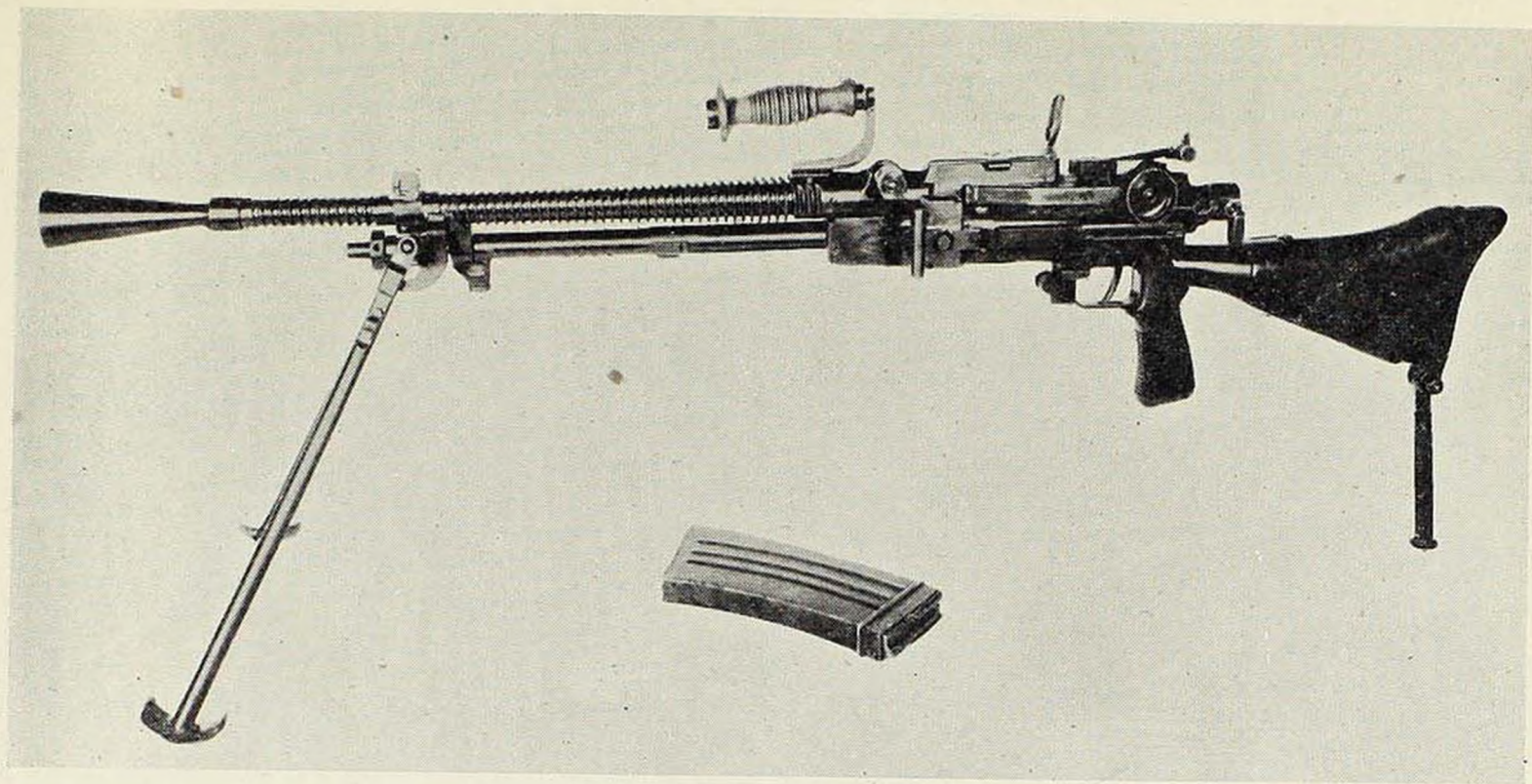


PLATE 11.—7.7 mm (.303 in) LMG Model 99 (1939).
Weight : 22 lb. Overall length : 42 in. Feed : 30 round box magazine.
Cyclic rate of fire : 800 rpm. Ammunition : rimless. Sighted to 1,500
metres.

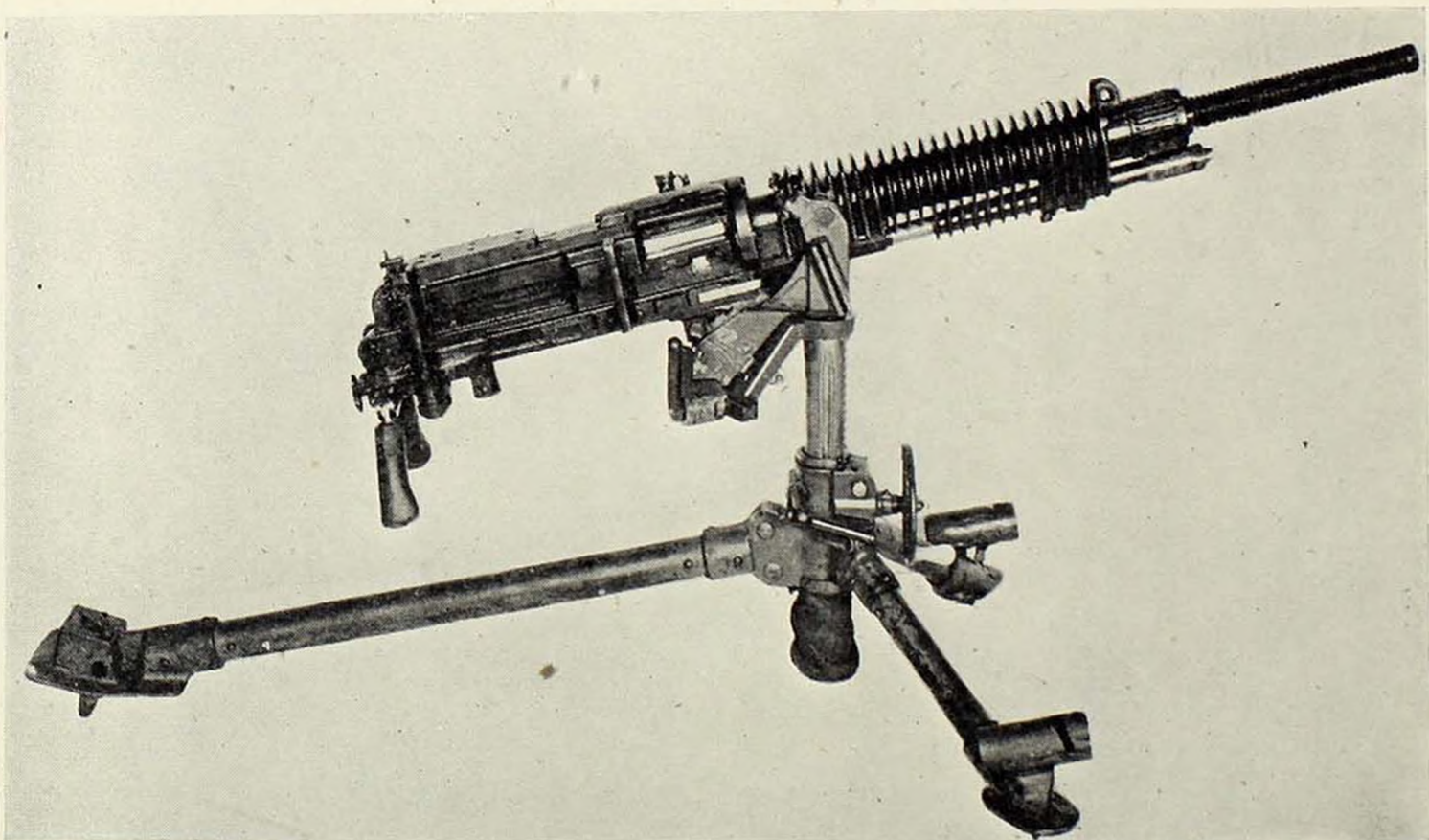


PLATE 12.—7.7 mm (.303 in) MMG Model 92 (1932).

Weight without tripod : 61 lb. Weight with tripod : 122 lb. Overall length : 45½ in. Feed : 30 round strip. Cyclic rate of fire : 450 rpm. Ammunition : rimless and semi-rimless. Direct sighting to 2,700 metres. Dial sight provided for indirect fire.

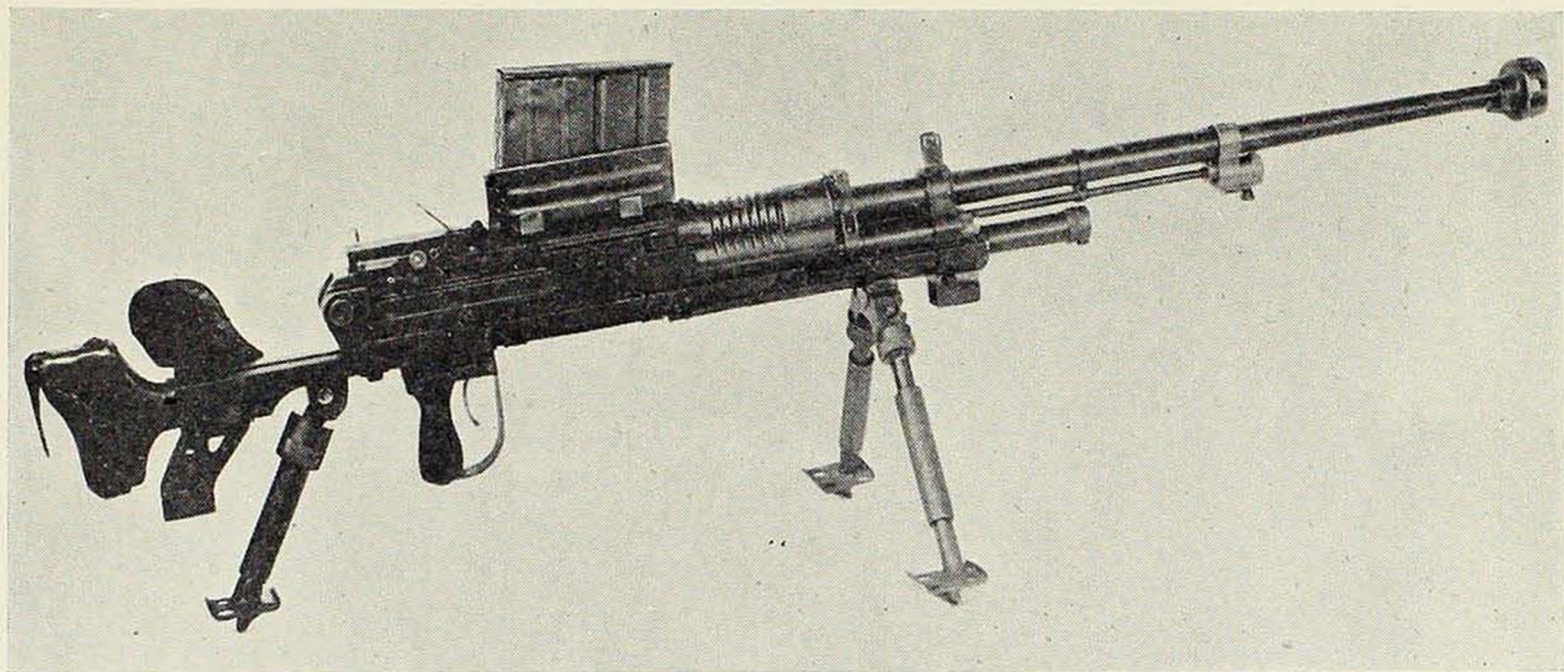


PLATE 13.—20 mm (.79 in) A tk rifle Model 97 (1937).

Weight in action : 140 lb. Overall length : 82½ in. Feed : 7 round box magazine. Sighted up to 1,000 metres. Provided with a shield and carrying handles.

SECTION 9
MILITARY BRIDGES

SECTION 10

DEMOLITION EQUIPMENT

The Japanese Army makes use in general of small types of demolition charges and equipment, which can be carried and used by the individual in difficult terrain.

There is a distinct trend in design to imitation of German models, except that the Japanese charges do not contain a standard threaded socket.

The explosives generally used are picric acid, TNT, and plastic explosives; picric acid is the most common and great care is taken to protect this from moisture, by use of waxed paper and zinc casings.

Igniters encountered include friction, pressure (concussion), pull (with and without delay).

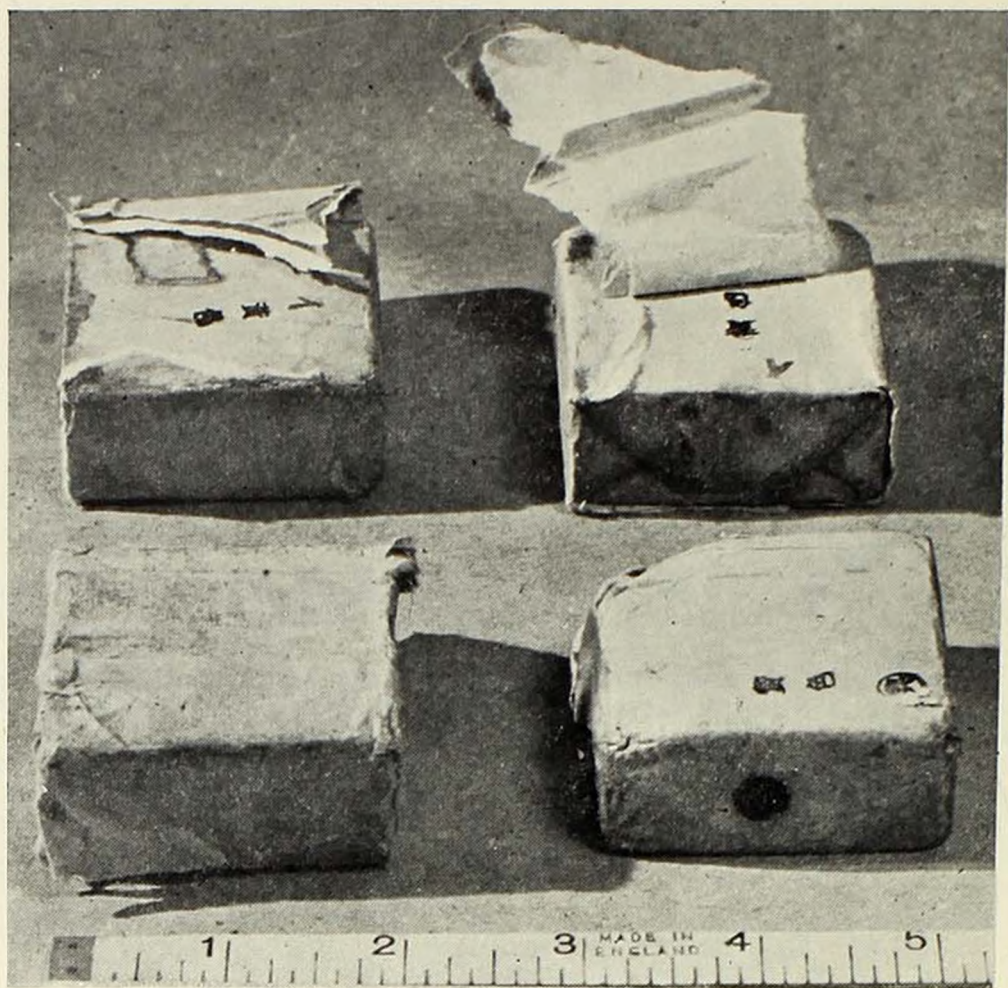


Plate 1.—100 gm (0.22 lb) Demolition Charge

This charge, measuring $2 \times 2 \times 1$ in is wrapped in waxed paper. It may or may not be provided with a hole for a detonator. The explosive is cast picric acid.

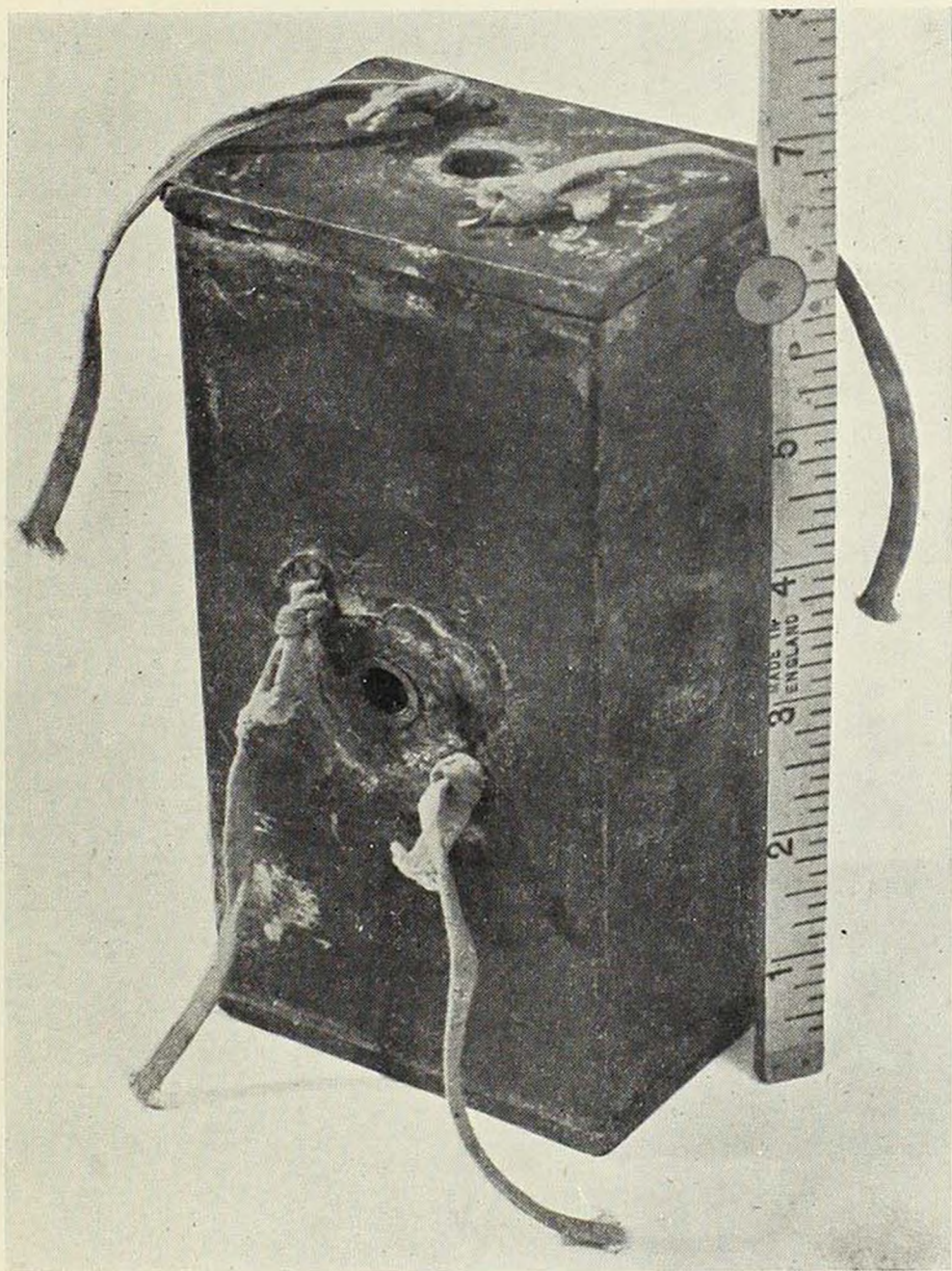


Plate 2.—1 kg (2.2 lb) Demolition Charge

This charge is contained in a zinc case (25 SWG) measuring $2\frac{7}{8} \times 2\frac{1}{8} \times 8$ in, and having two brass tubes for detonators.

Tapes or silk thread may be used, presumably for retention of the detonator.

The total weight of the charge is 1,300 gm (2 lb 14 oz).

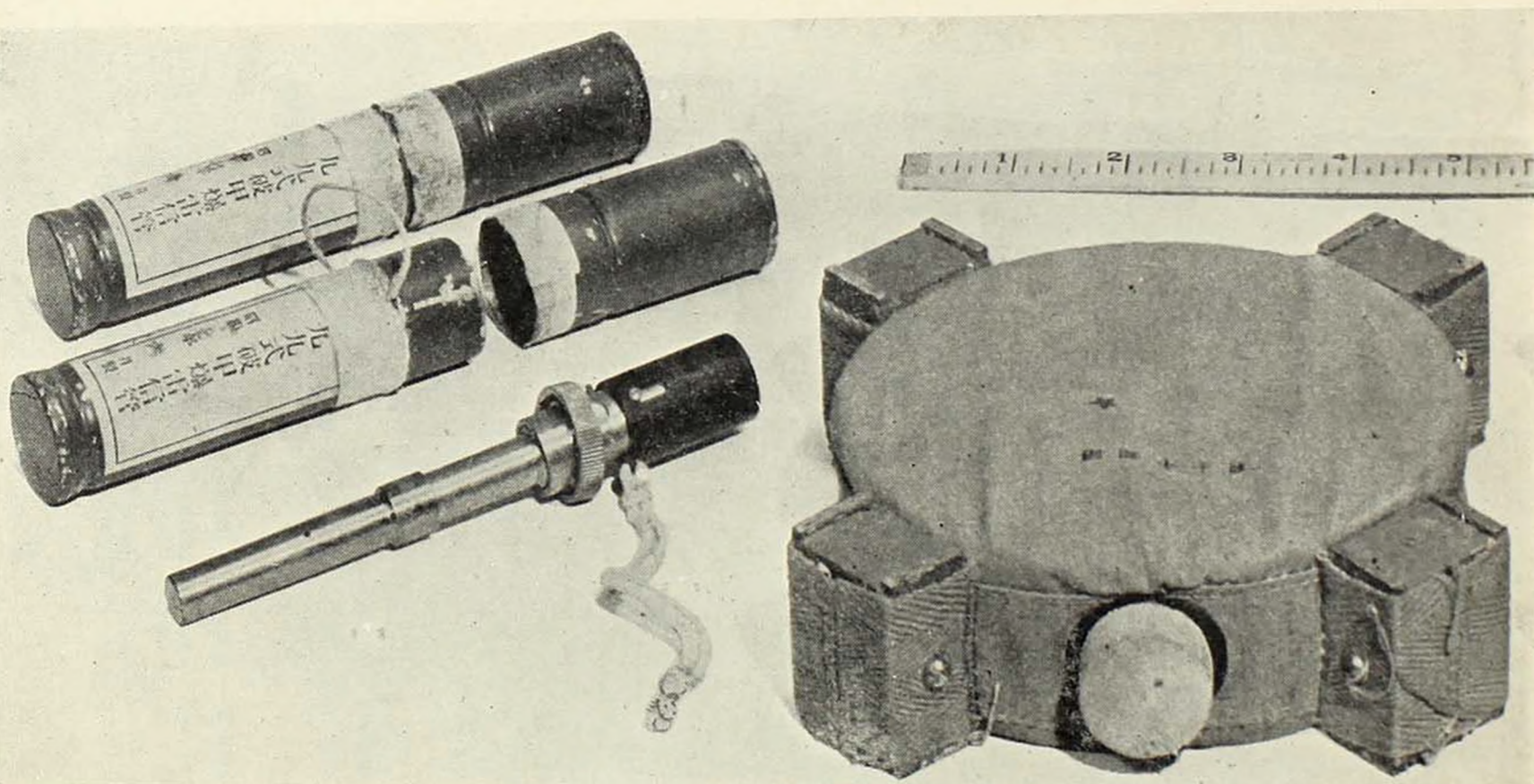


PLATE 3.—Magnetic Demolition charge, Model 99 (1939). (Hakobakurai).

This charge weighs 2 lb 11 oz complete and contains 1 lb 1 oz of cast TNT in eight specially shaped blocks. A complete igniter set is carried in a separate metal case. When the safety pin is withdrawn the end cap of the igniter is given a sharp knock to ignite a percussion cap and powder delay train. The delay period is 5—6 seconds.

The charge is reported to penetrate 20 mm armour plate.

The charge has to be placed on the armour; throwing is not a successful operation owing to weakness of the magnets.

SECTION 11

MINES

No standard anti-personnel mines have been used by the Japanese Army so far. Booby traps and improvised mines making use of the various types of hand grenade in conjunction with trip-wires, pull and pressure or concussion methods of ignition have, however, been profusely employed on all fronts.

The standard anti-tank mine used was the Model 93 "tape measure" mine (*see* Plate 1), and although reports have been received of other types they have so far not been substantiated. Improvised mines have also been employed against tanks with varying success.

An account of the Magnetic Demolition Charge, Model 99—sometimes referred to as an A tk mine—will be found in the Section on Demolition Equipment.

The anti-boat mine, Model 98 (hemispherical) has been extensively used by the Japanese as an obstacle to beach landings.

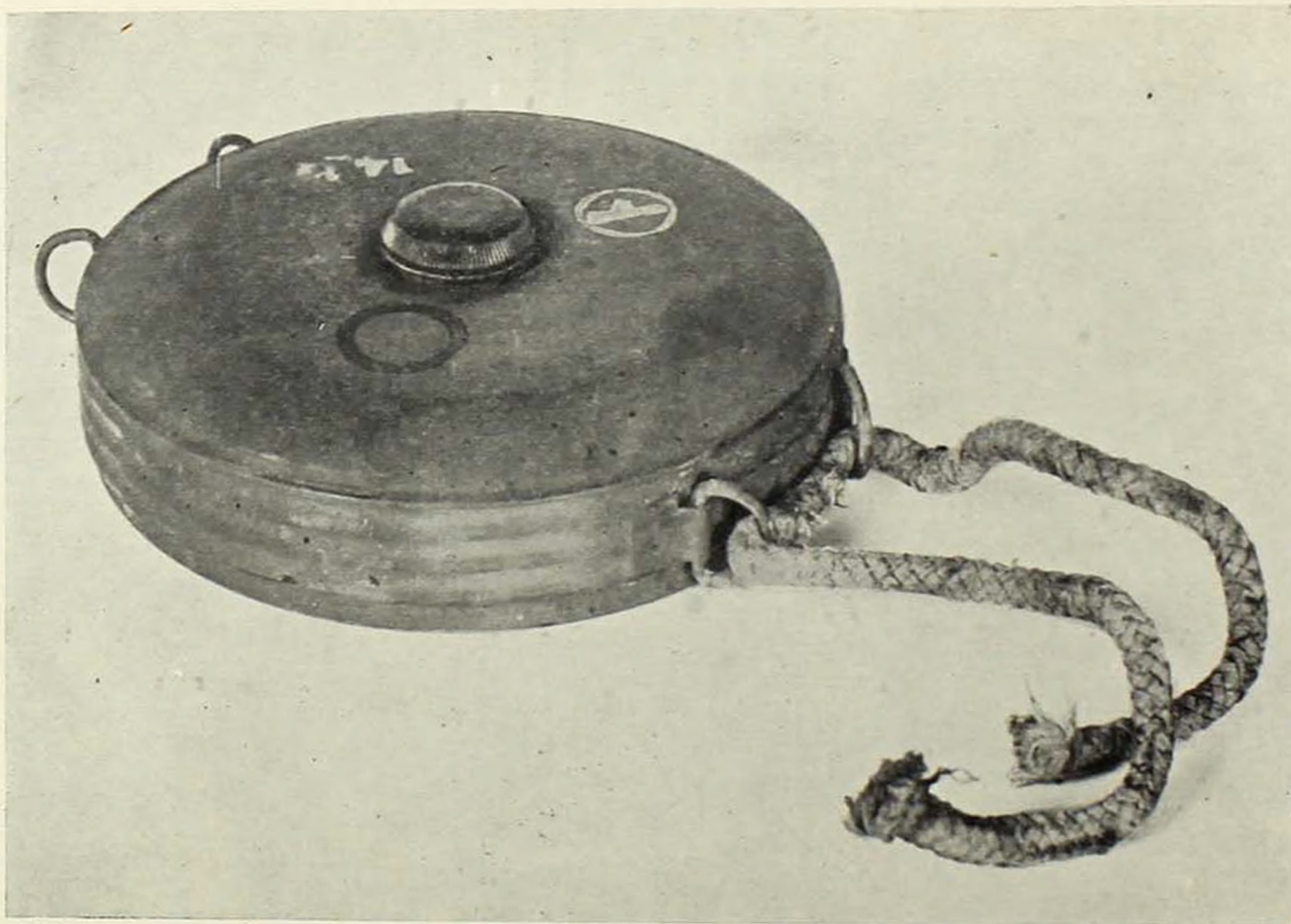


PLATE 1.—A per/A tk Mine, Model 93 (1933).

The mine is $6\frac{1}{4}$ in in diameter and weighs 3 lb complete. The weight of explosive is about 2 lb. When the igniter is fitted with an A tk shear wire the firing pressure is believed to be about 250 lb; the shear wire for A per use is reported from Australia to fail at 70 lb.

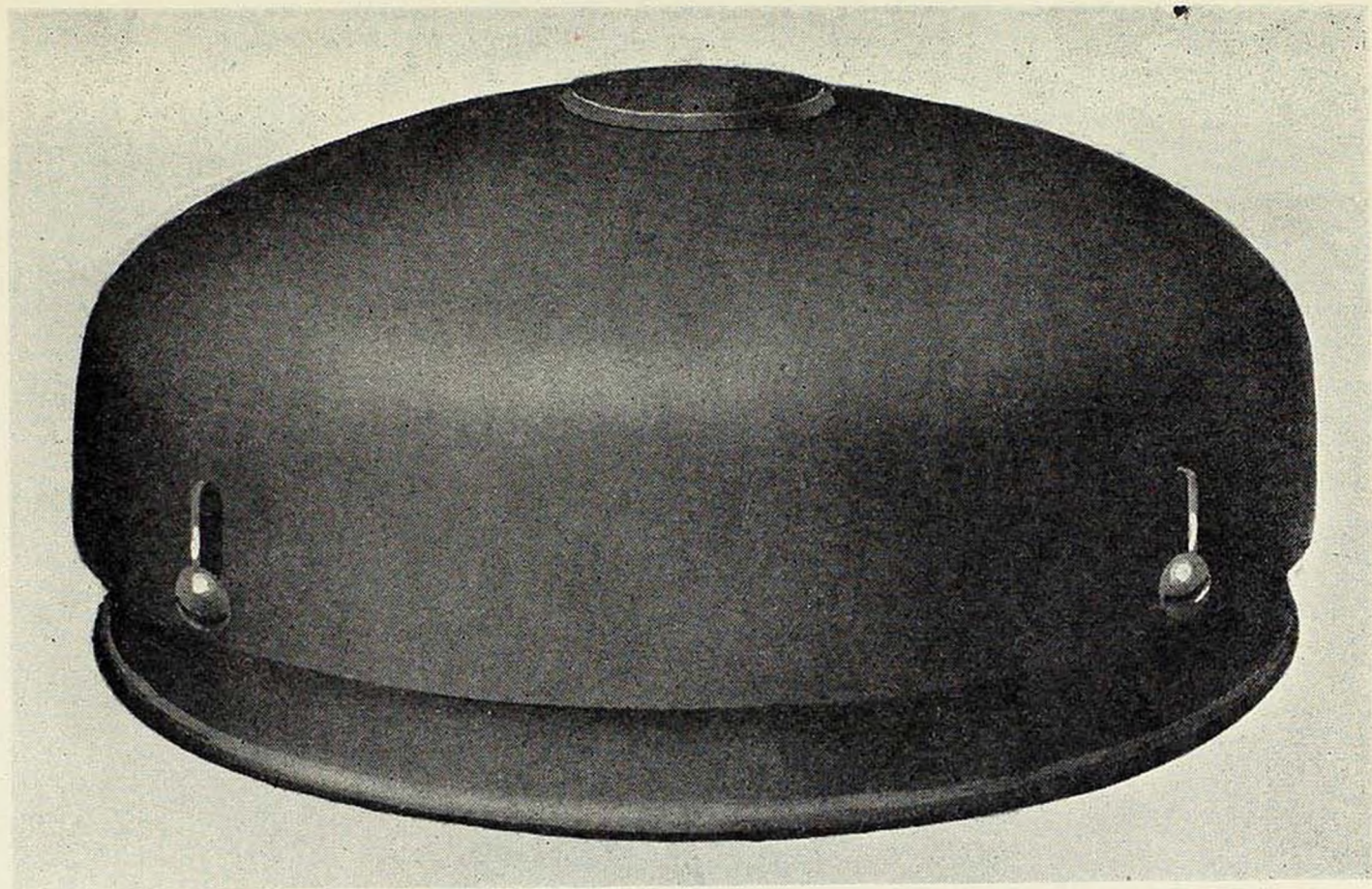


PLATE 2.—A per/A tk Mine, Dutch model (PW2—41).

This mine, originally Dutch equipment, was found in Guadalcanal. It measures $8\frac{1}{4}$ in diameter by $3\frac{1}{2}$ in high, contains $5\frac{1}{4}$ lb of cast TNT and weighs $9\frac{1}{2}$ lb. The firing load is believed to be about 50 lb.

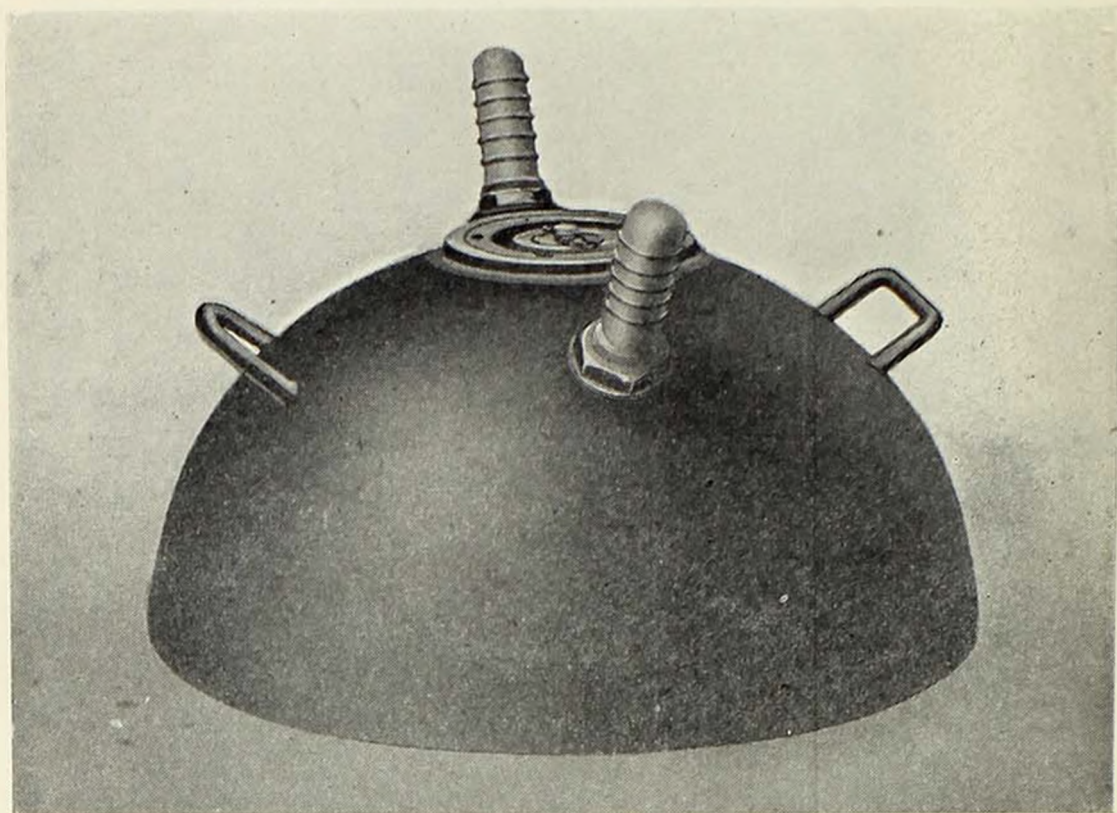


PLATE 3.—Anti-boat Mine, Model 98 (1938).

This mine is 1 ft 8 in in diameter, 10 $\frac{5}{8}$ in high and weighs 106 $\frac{1}{2}$ lb, with an explosive filling of 46 $\frac{1}{2}$ lb. The mine is provided with an arming device in the top which consists of plunger contact assembly, electric detonator and primer. It is initiated through the crushing of either of the two lead-alloy horns containing a phial of electrolytic solution which passes into a cell to complete the electric circuit. In addition to being laid against landing craft these mines have been found above high water mark with wires tied to their horns for initiation.

SECTION 12

FLAMETHROWERS

While there have been unconfirmed reports of a Japanese heavy tank mounting a flamethrower, the only flame warfare weapons so far encountered have been the light portable models which are carried on the operator's back.

The following types are known to exist:—

Model 93.

Model 93 modified.

Model 100.

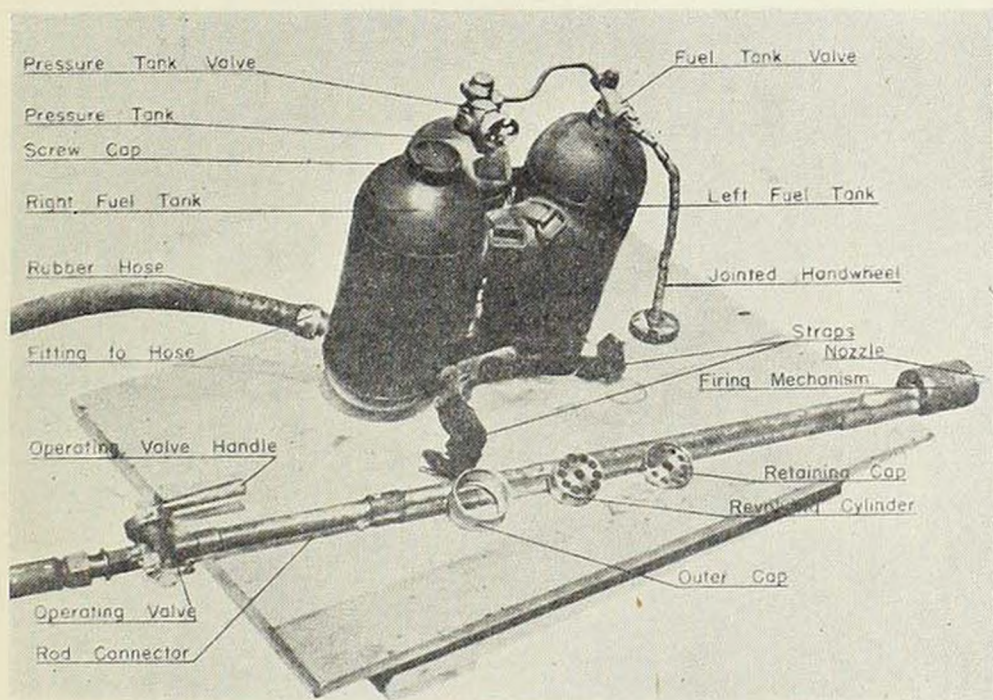


Plate 1.—Light Portable Flamethrower, Model 93 (1933).

This equipment, with a charged weight of 55 lb and a capacity of $3\frac{1}{4}$ gall, fires an oil type fuel to a maximum range of 30 yd. The duration of continuous discharge is 10—12 sec.

The fuel is ignited by flash from a blank cartridge, ten of which are loaded in the revolving cylindrical chamber at the forward end of the flame gun. The firing mechanism is actuated by operation of the handle which also controls fuel emission.

The model 93 modified flamethrower has a shorter flame gun and a modified cartridge chamber mechanism.

CONVERSION DIAGRAM (Con: Mils to Degrees & Minutes)

